SESSION I

INTRODUCTION AND OVERVIEW

SESSION I

INTRODUCTION AND OVERVIEW

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

- State the goals and objectives of the course.
- Describe the course schedule and activities.
- 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 crashes, 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, participants 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, participants will come to:

   a. Understand the tasks and decisions of DWI detection.

   b. Recognize the magnitude and scope of DWI-related crashes, 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 other drug impairment that may be seen during face-to-face contact with DWI suspects.

h. Know and recognize typical behavioral clues of alcohol and/or other drug impairment 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 other drug impairment 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 training program, the goals and objectives for those modules are listed in the appropriate manuals.

ATTACHMENT(S)

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.

BREATH ALCOHOL CONCENTRATION (BrAC) - The percentage of alcohol in a person's breath, taken from deep in the lungs.

CLUE - Something that leads to the solution of a problem.

CUE - A reminder or prompting as a signal to do something. A suggestion or a hint.

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

DWI/DUI - The acronym "DWI" means driving while impaired and is synonymous with the acronym "DUI", driving under the influence or other acronyms used to denote impaired driving. These terms refer to any and all offenses involving the operation of vehicles by persons under the influence of alcohol and/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) - An involuntary 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 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.

VERTICAL GAZE NYSTAGMUS - An involuntary jerking of the eyes (up and down) which occurs when the eyes gaze upward at maximum elevation.

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 participant 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 history of alcohol;
- o Identify common types of alcohols;
- o Describe the physiologic processes of absorption, distribution and elimination of alcohol in the human body;

<u>CONTENT SEGMENTS</u>

A. The DWI Problem

B. The Concept of General Deterrence

C. Relating Detection to Deterrence Potential

D. Evidence of Effective Detection and Effective Deterrence

E. Physiology of Alcohol

<u>LEARNING ACTIVITIES</u>

o Instructor-Led Presentations

o Reading Assignments

DWI DETERRENCE: AN OVERVIEW

Each year, tens of thousands of people die in traffic crashes. Throughout the nation, alcohol is the major contributor to traffic fatalities. In 2002, alcohol-related fatalities rose to 17,419, representing 41 percent of all traffic fatalities. (NHTSA 2002 FARS data)

Impaired drivers are more likely than other drivers to take excessive risks such as speeding or turning abruptly. Impaired 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 crashes are <u>not</u> simply the work of a relatively few "problem drinkers" or "problem drug users." <u>Many</u> 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.

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.

THE PROBLEM OF DWI

HOW WIDESPREAD IS DWI?

While not all of those who drive after drinking have a BAC of 0.08/0.10 or more, the presumptive or illegal per se limit for DWI in many states, some drivers do have BACs in excess of these limits.

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 impaired. 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?

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. Not everyone who commits DWI is out on the road impaired 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 impaired virtually everyday; others commit the violation less often. It is likely that at least one quarter of all American motorists drive while impaired 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.

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.

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

Our estimated one in four drivers includes everyone who drives impaired 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 a crash while impaired.

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.

GENERAL DETERRENCE

One approach to reducing the number of drinking drivers is <u>general deterrence</u> 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 <u>will</u> get caught, sooner or later, if they continue to drive while impaired.

<u>How many DWI violators must be arrested in order to convince the public that there is a real risk of arrest for DWI</u>? 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 2-1) When the chances of being arrested are one in two thousand, the average DWI violator really has little to fear.

EXHIBIT 2-1

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.

- o 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 1975 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 impaired. 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 2-2.) It is clear that significant improvement in the arrest rate could be achieved if officers were more skilled at DWI detection.

EXHIBIT 2-2

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 crashes 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 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.

- 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 impaired.

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 <u>attitudes</u> 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 <u>wrong</u>. 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 minimal, they will quickly lose whatever fear of arrest they may have felt.

Enforcement is the mechanism for creating and sustaining a 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 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 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 intensified enforcement has never been enough to maintain the fear of arrest 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 below 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 <u>every year</u>, 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]

---

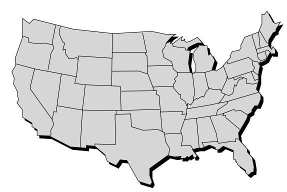
[4] DWI Law Enforcement Training, op. cit.

[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" contains a molecule chemists refer to as a "hydroxy radical." This radical contains one oxygen atom and one hydrogen atom bonded together. The simplest alcohol has only one carbon atom, three hydrogen atoms, and one hydroxy radical. The next alcohol has two carbon atoms, five hydrogen atoms and one hydroxy radical. The third alcohol has three carbon atoms, seven hydrogen atoms and one hydroxy radical. 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 bonded to one of the hydrogen atoms, ("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**.

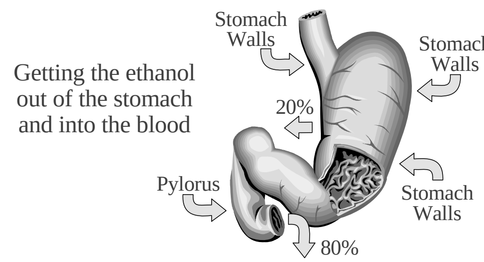
PHYSIOLOGIC PROCESSES

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 those cases, that "limit" is 0.08 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 0.08 means. Blood alcohol concentration is expressed in terms of the "number of grams of ethanol in every 100 milliliters of blood". Therefore, 0.08 means that there is 0.08 grams (g) of ethanol in every 100 milliliters (mL) of blood. You will find that BAC results are reported in a variety of units. Two common variations are milligrams/milliliters and percent. There are 1000 milligrams (mg) in one gram; therefore, 0.08 grams equals 80 milligrams (mg) and a BAC of 0.08 would be reported as 80 mg of ethanol/100 mL of blood. Percent means parts per one hundred. In this example 0.08 grams/100 milliliters of blood is equivalent to 0.08% BAC.

Note: The term BAC is used in the manual. However, it should be understood to refer to either Blood Alcohol Concentration (BAC) or Breath Alcohol Concentration (BrAC) depending on the legal requirements of the jurisdiction.

TEST YOUR KNOWLEDGE

INSTRUCTIONS: Complete the following sentences.

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

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

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

4. 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?

5. 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?

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

   A. grams
   B. milligrams
   C. nanograms

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

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

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

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

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

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

13. 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.

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

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

16. 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

17. 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 participant will be able to:

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

<u>CONTENT SEGMENTS</u>

A. Basic DWI Statute: Driving While Under The Influence

B. Implied Consent Law and Presumptions

C. Illegal Per Se Statute: Driving With A Proscribed Blood Alcohol Concentration

D. Preliminary Breath Testing

E. Case Law Review

<u>LEARNING ACTIVITIES</u>

- o Instructor-Led Presentation
- o Reading Assignments

INTRODUCTION

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

All states (and many local jurisdictions) have their own impaired 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 impaired 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.**

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 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 impaired 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 states drivers must submit to a chemical test(s). 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 <u>presumptive</u> of alcohol influence, not <u>conclusive</u>.

If there is no evidence to the contrary, the court may accept the legal presumption and conclude that the driver was or was not impaired 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:

<u>Example 1</u>

A driver is arrested for DWI. A chemical test administered to the driver shows a BAC of 0.13 . 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 0.05 . At the subsequent trial, the chemical test evidence is introduced. In addition, the arresting officer testifies about the driver's 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 0.08/0.10 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 alcohol-related 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 impaired.

NOTE: These laws vary from state to state. Know 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:

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

- 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 impaired 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 impaired 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 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.

HISTORY OF CASE LAW

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

- o 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 var-ious 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 prac-tice 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 arrest-ing 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. 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 v. HOMAN (732 N.E.2d 952, OHIO 2000)

This significant State Supreme Court case held that Standardized Field Sobriety Tests (SFSTs) conducted in a manner that departs from the methods established by the National Highway Traffic Safety Administration (NHTSA) “are inherently unreliable”. The court determined that the administration of the SFSTs, including the one-leg stand and walk-and-turn tests, must be performed in strict compliance with the directives issued by NHTSA.

The court concluded that because the arresting officer admitted to not having strictly complied with established police procedure during the administration of the HGN and walk-and-turn tests, the results of the SFSTs must be excluded. In contrast with other court rulings, the *HOMAN* court found *"it is well established that in field sobriety testing even minor deviations from the standardized procedures can severely bias the results."* This decision was based upon an older edition of this manual where an ambiguous phrase was strictly interpreted by the court. The phrase in question only applied to the use of SFSTs for training purposes.

SMITH vs. WYOMING (Wyoming, 2000)

The State Supreme Court held a law enforcement officer may testify to the results of field sobriety tests (including HGN) if it is shown that the officer has been adequately trained in the administration and assessment of those field sobriety tests, and conducted them in substantial accordance with that training. The court further stated *"deficiencies in the administration of the sobriety tests go to the weight accorded the evidence and not to its admissibility."*

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. Additionally, officers should recognize the relevance of administering the Standardized Field Sobriety Tests in accordance with the NHTSA guidelines.

The National Traffic Law Center (NTLC) has a list of every state's Appellate Court/ Supreme Court case addressing HGN and SFST issues. The materials are available to law enforcement at www.ndaa.org/apri/NTLC or by phone (703) 549-4253.

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 to help determine ____________________________________

   ____

ATTACHMENT(S)

ATTACHMENT A

American Prosecutors Research Institute
National Traffic Law Center

HORIZONTAL GAZE NYSTAGMUS
STATE CASE LAW SUMMARY

INTRODUCTION

The following state case law summary contains the seminal cases for each state, the District of Columbia and the Federal courts on the admissibility of HGN. Three main issues regarding the admissibility of the HGN test are set out under each state: evidentiary admissibility, police officer testimony, and purpose and limits of the HGN test results. The case or cases that address each issue are then briefly summarized and cited.

Alabama

I. Evidentiary Admissibility

HGN is a scientific test that must satisfy the *Frye* standard of admissibility. The Supreme Court of Alabama found that the State had not presented "sufficient evidence regarding the HGN test's reliability or its acceptance by the scientific community to determine if the Court of Criminal Appeals correctly determined that the test meets the Frye standards."
Malone v. City of Silverhill, 575 So.2d 106 (Ala. 1990).

II. Police Officer Testimony Needed to Admit HGN Test Result

The Court did not address this issue.

III. Purpose and Limits of HGN

The Court did not address this issue.

Alaska

I. Evidentiary Admissibility

HGN is a scientific test. It is generally accepted within the relevant scientific community.
Ballard v. Alaska, 955 P.2d 931, 939 (Alaska Ct. App. 1998).

II. Police Officer Testimony Needed to Admit HGN Test Result

A police officer may testify to the results of HGN testing as long as the government establishes a foundation that the officer has been adequately trained in the test.
Ballard, 955 P.2d at 941.

III. Purpose and Limits of HGN

HGN testing is "a reliable indicator of a person's alcohol consumption and, to that extent, HGN results are relevant." The court cautioned that the HGN test could not be used to correlate the results with any particular blood-alcohol level, range of blood-alcohol levels, or level of impairment.
Ballard, 955 P.2d at 940.

Arizona

I. Evidentiary Admissibility

HGN is a scientific test that needs to satisfy the *Frye* standard of admissibility. State has shown that HGN satisfies the *Frye* standard. *State v. Superior Court* (*Blake*), 718 P.2d 171, 181 (Ariz. 1986) (seminal case on the admissibility of HGN).

II. Police Officer Testimony Needed to Admit HGN Test Result

"The proper foundation for [admitting HGN test results] . . . includes a description of the officer's training, education, and experience in administering the test and showing that proper procedures were followed."
Arizona ex. rel. Hamilton v. City Court of Mesa, 799 P.2d 855, 860 (Ariz. 1990).
See also Arizona ex. Rel. McDougall v. Ricke, 778 P.2d 1358, 1361 (Ariz. Ct. App. 1989).

III. Purpose and Limits of HGN

HGN test results are admissible to establish probable cause to arrest in a criminal hearing.
State v. Superior Court (*Blake*), 718 P.2d at 182.

"Where a chemical analysis has been conducted, the parties may introduce HGN test results in the form of estimates of BAC over .10% to challenge or corroborate that chemical analysis."
Ricke, 778 P.2d at 1361.

When no chemical analysis is conducted, the use of HGN test results "is to be limited to showing a symptom or clue of impairment."
Hamilton, 799 P.2d at 858.

Arkansas

I. Evidentiary Admissibility

Novel scientific evidence must meet the *Prater* (relevancy) standard for admissibility. Because law enforcement has used HGN for over thirty-five years, a *Prater* inquiry is not necessary as the test is not "novel" scientific evidence. *Whitson v. Arkansas*, 863 S.W.2d 794, 798 (Ark. 1993).

II. Police Officer Testimony Needed to Admit HGN Test Result

The Court did not address this issue.

III. Purpose and Limits of HGN

HGN may be admitted as evidence of impairment, but is not admissible to prove a specific BAC.
Whitson, 863 S.W.2d at 798.

California

I. Evidentiary Admissibility

HGN is a scientific test and the *Kelly/Frye* "general acceptance" standard must be applied.
California v. Leahy, 882 P.2d 321 (Cal. 1994). *California v. Joehnk*, 35 Cal. App. 4th 1488, 1493, 42 Cal.
Rptr. 2d 6, 8 (Cal. Ct. App. 1995).

"…[A] consensus drawn from a typical cross-section of the relevant, qualified scientific community accepts the HGN testing procedures…."
Joehnk, 35 Cal. App. 4th at 1507, 42 Cal. Rptr. 2d at 17.

II. Police Officer Testimony Needed to Admit HGN Test Result

Police officer testimony is insufficient to establish "general acceptance in the relevant scientific community." *Leahy*, 882 P2d. at 609. Also see *People v. Williams*, 3 Cal. App. 4th 1326 (Cal. Ct. App. 1992).

Police officer can give opinion, based on HGN and other test results, that defendant was intoxicated. Furthermore, police officer must testify as to the administration and result of the test.
Joehnk, 35 Cal. App. 4th at 1508, 42 Cal. Rptr. 2d at 18.

III. Purpose and Limits of HGN

HGN may be used, along with other scientific tests, as some evidence that defendant was impaired.
Joehnk, 35 Cal. App. 4th at 1508, 42 Cal. Rptr. 2d at 17.

HGN test results may not be used to quantify the BAC level of the defendant.
California v. Loomis, 156 Cal. App. 3d Supp. 1, 5-6, 203 Cal. Rptr. 767, 769-70 (1984).

Connecticut

I. Evidentiary Admissibility

Proper foundation must be established in accordance with *Daubert* prior to the introduction of HGN test results. *State v. Russo,* 773 A. 2d 965 (Conn. App. Ct. 2001).

Also see, *Connecticut v. Merritt*, 647 A.2d 1021, 1028 (Conn. App. Ct. 1994). HGN must meet the *Frye* test of admissibility. In this case, the state presented no evidence to meet its burden under the *Frye* test.

HGN satisfies the *Porter* standards and is admissible. (In *State v. Porter*, 698 A.2d 739 (1997), the Connecticut Supreme Court held the *Daubert* approach should govern the admissibility of scientific evidence and expressed factors to be considered in assessing evidence.)
Connecticut v. Carlson, 720 A.2d 886 (Conn. Super. Ct. 1998).

II. Police Officer Testimony Needed to Admit HGN Test Result

Must lay a proper foundation with a showing that the officer administering the test had the necessary qualifications and followed proper procedures. *Connecticut v. Merritt,* 647 A.2d 1021, 1028 (Conn. App. Ct. 1994).

III. Purpose and Limits of HGN

HGN test results can be used to establish probable cause to arrest in a criminal hearing.
Connecticut v. Royce, 616 A.2d 284, 287 (Conn. App. Ct. 1992).

Delaware

I. Evidentiary Admissibility

HGN evidence is scientific and must satisfy the Delaware Rules of Evidence standard.
Delaware v. Ruthardt, 680 A.2d 349, 356 (Del. Super. Ct. 1996).

HGN evidence is acceptable scientific testimony under the Delaware Rules of Evidence.
Ruthardt, 680 A.2d at 362.

II. Police Officer Testimony Needed to Admit HGN Test Result

Police officer may be qualified as an expert to testify about the underlying scientific principles that correlate HGN and alcohol. Delaware police receiving three-day (twenty-four hour) instruction on HGN test administration are not qualified to do this.
Ruthardt, 680 A.2d at 361-62.

Police officer testimony about training and experience alone, without expert testimony, is not enough foundation to admit HGN test results.
Zimmerman v. Delaware, 693 A.2d 311, 314 (Del. 1997).

III. Purpose and Limits of HGN

HGN test results admissible to show probable cause in a criminal hearing.
Ruthardt, 680 A.2d at 355.

HGN test results admissible to show probable cause in a civil hearing.
Cantrell v. Division of Motor Vehicles, 1996 Del. Super. LEXIS 265 (Del. Super. Ct. Apr. 9, 1996).

HGN test results cannot be used to quantify the defendant's BAC. However, they can be used as substantive evidence that the defendant was "under the influence of intoxicating liquor."
Ruthardt, 680 A.2d at 361-62.

District of Columbia

I. Evidentiary Admissibility

The Court does not address this issue.

II. Police Officer Testimony Needed to Admit HGN Test Result

The Court used the case law of other jurisdictions to come to the conclusion that the Officer in the case could testify as an expert on the administration and the results of the HGN test. Therefore, in this case, the evidence was properly admitted using the Officer as the expert. See Karamychev v. District of Columbia, 772 A. 2d 806 (D.C. App. 2001).

III. Purpose and Limits of HGN

The Court has not yet addressed this issue.

Florida

I. Evidentiary Admissibility

The 3rd District Court found HGN to be a "quasi-scientific" test. Its application is dependent on a scientific proposition and requires a particular expertise outside the realm of common knowledge of the average person. It does not have to meet the *Frye* standard because HGN has been established and generally accepted in the relevant scientific community, and has been *Frye* tested in the legal community. The court took judicial notice that HGN is reliable based on supportive case law from other jurisdictions, numerous testifying witnesses and studies submitted. It is "no longer 'new or novel' and there is simply no need to reapply a *Frye* analysis."
Williams v. Florida, 710 So. 2d 24 (Fla. Dist. Ct. App. 1998).

The 4th District Court found HGN to be a scientific test. However, because it is not novel, the *Frye* standard is not applicable. However, "[e]ven if not involving a new scientific technique, evidence of scientific tests is admissible only after demonstration of the traditional predicates for scientific evidence including the test's general reliability, the qualifications of test administrators and technicians, and the meaning of the results." Without this predicate, "the danger of unfair prejudice, confusion of issues or misleading the jury from admitting HGN test results outweighs any probative value." The state did not establish the appropriate foundation for the admissibility of HGN test results.
Florida v. Meador, 674 So. 2d 826, 835 (Fla. Dist. Ct. App. 1996), *review denied*, 686 So. 2d 580 (Fla. 1996).

II. Police Officer Testimony Needed to Admit HGN Test Result

"We take judicial notice that HGN test results are generally accepted as reliable and thus are admissible into evidence once a proper foundation has been laid that the test was correctly administered by a qualified DRE [Drug Recognition Expert]."
Williams, 710 So. 2d at 32.

Also see *Bown v. Florida*, 745 So. 2d 1108 (Fl. Dist. Ct. App. 1999) which expands *Williams.* Allows trooper to explain HGN, but district requires confirmatory blood, breath or urine test before admitting HGN into evidence.

No evidence presented as to the police officer's qualifications nor administration of the HGN test in this case.
Meador, 674 So. 2d at 835.

III. Purpose and Limits of HGN

The HGN test results alone, in the absence of a chemical analysis of blood, breath, or urine, are inadmissible to trigger the presumption provided by the DUI statute, and may not be used to establish a BAC of .08 percent or more.
Williams, 710 So. 2d at 36.

Georgia

I. Evidentiary Admissibility

The HGN test is admissible as a "scientifically reliable field sobriety evaluation" under the *Harper* "verifiable certainty" standard. *Manley v. Georgia*, 424 S.E.2d 818, 819-20 (Ga. Ct. App. 1992).

HGN testing is judicially noticed as a scientifically reliable test and therefore expert testimony is no longer required before the test results can be admitted.
Hawkins v. Georgia, 476 S.E.2d 803, 808-09 (Ga. Ct. App. 1996).

II. Police Officer Testimony Needed to Admit HGN Test Result

Police officer, who received specialized training in DUI detection and worked with a DUI task force for two years, was permitted to testify that, in his opinion, defendant was under the influence.
Sieveking v. Georgia, 469 S.E.2d 235, 219-20 (Ga. Ct. App. 1996).

A Police officer who testifies to the results, administration, and procedure of HGN may be cross-examined about those areas even if the state only offers him as a POST-certified officer. This is because the analysis and expertise needed for HGN go far beyond those needed by a lay person who observes the walk and turn or one leg stance tests. *James v. State,* 2003 WL 1540235 (Ga. App.).

III. Purpose and Limits of HGN

HGN test can be admitted to show that the defendant "was under the influence of alcohol to the extent that it was less safe for him to drive."
Sieveking, 469 S.E.2d at 219.

Hawaii

I. Evidentiary Admissibility

HGN is a scientific test. The HGN test is reliable under the Hawaii Rules of Evidence and admissible as "evidence that police had probable cause to believe that a defendant was DUI." Judicial notice of the "validity of the principles underlying HGN testing and the reliability of HGN test results" is appropriate. HGN test results can be admitted into evidence if the officer administering the test was duly qualified to conduct the test and the test was performed properly.
Hawaii v. Ito, 978 P.2d 191 (Haw. Ct. App. 1999).

II. Police Officer Testimony Needed to Admit HGN Test Result

Before HGN test results can be admitted into evidence in a particular case, however, it must be shown that (1) the officer administering the test was duly qualified to conduct and grade the test; and (2) the test was performed properly in the instant case. *Hawaii v. Ito*, 978 P.2d 191 (Haw. Ct. App. 1999), *See also Hawaii v. Toyomura*, 904 P.2d 893, 911 (Haw. 1992) and *Hawaii v. Montalbo,* 828 P2d. 1274, 1281 (Haw. 1992).

III. Purpose and Limits of HGN

HGN test can be admitted as "evidence that police had probable cause to believe that a defendant was DUI." *Hawaii v. Ito*, 978 P.2d 191 (Haw. Ct. App. 1999).

Idaho

I. Evidentiary Admissibility

HGN test results admitted under the Idaho Rules of Evidence. Rule 702 is the correct test in determining the admissibility of HGN. *State v. Gleason*, 844 P.2d 691, 694 (Idaho 1992).

II. Police Officer Testimony Needed to Admit HGN Test Result

Officer may testify as to administration of HGN test, but not correlation of HGN and BAC.
State v. Garrett, 811 P.2d 488, 493 (Idaho 1991).

III. Purpose and Limits of HGN

"HGN test results may not be used at trial to establish the defendant's blood alcohol level . . . Although we note that in conjunction with other field sobriety tests, a positive HGN test result does supply probable cause for arrest, standing alone that result does not provide proof positive of DUI…."
Garrett, 811 P.2d at 493.

HGN may be "admitted for the same purpose as other field sobriety test evidence -- a physical act on the part of [defendant] observed by the officer contributing to the cumulative portrait of [defendant] intimating intoxication in the officer's opinion."
Gleason, 844 P.2d at 695.

Illinois

I. Evidentiary Admissibility

HGN meets *Frye* standard of admissibility.
People v. Buening, 592 N.E.2d 1222, 1227 (Ill. App. Ct. 1992).

Despite the ruling of the *Buening* appellate court, the Fourth District Court of Appeals declined to recognize HGN's general acceptance without a *Frye* hearing. The court criticized the *Buening* court for taking judicial notice of HGN's reliability based on the decisions of other jurisdictions.
People v. Kirk, 681 N.E.2d 1073, 1077 (Ill. App. Ct. 1997).

The state supreme court held that the state was <u>no longer required to show than an HGN test satisfied the Frye standard</u> before introducing the results of the test into evidence. Absent <u>proof</u> by the defense that the HGN test was unsound, the State only had to show that the officer who gave the test was trained in the procedure and that the test was properly administered. *The People of the State of Illinois v. Linda Basler*, 740 N.E.2d 1 (Ill. 2000), 2000 Ill. LEXIS 1698 (Ill. 2000). (Plurality Opinion) According to Fourth Circuit, a Frye hearing must be held for HGN to be admitted. *People v. Herring*, 762 N.E.2d 1186.

II. Police Officer Testimony Needed to Admit HGN Test Result

"A proper foundation should consist of describing the officer's education and experience in administering the test and showing that the procedure was properly administered."
Buening, 592 N.E.2d at 1227.

III. Purpose and Limits of HGN

HGN test results may be used to establish probable cause in a criminal hearing.
People v. Furness, 526 N.E.2d 947, 949 (Ill. App. Ct. 1988).

HGN test results admissible to show probable cause in a civil hearing.
People v. Hood, 638 N.E.2d 264, 274 (Ill. App. Ct. 1994).

HGN test results may be used "to prove that the defendant is under the influence of alcohol."
Buening, 592 N.E.2d at 1228.

Indiana

I. Evidentiary Admissibility

Results of properly administered HGN test are admissible to show impairment which may be caused by alcohol and, when accompanied by other evidence, will be sufficient to establish probable cause to believe a person may be intoxicated. *Cooper v. Indiana*, 751 N.E.2d 900, 903 (Ind. Ct. App. Feb. 2002)

II. Police Officer Testimony Needed to Admit HGN Test Result

The proper foundation for admitting HGN evidence should consist of describing the officer's education and experience in administering the test and showing that the procedure was properly administered.
Cooper, 751 N.E.2d at 903.

The question of whether a trained officer might express an opinion that defendant was intoxicated based upon the results of field sobriety tests was not before the court, and thus, the court expressed no opinion concerning the admissibility of such testimony. *Cooper*, 751 N.E. 2d at 902, n. 1.

III. Purpose and Limits of HGN

HGN test results, when accompanied by other evidence, will be sufficient to establish probable cause that the person may be intoxicated. *Cooper*, 751 N.E.2d at 903.

Iowa

I. Evidentiary Admissibility

HGN admissible as a field test under the Iowa Rules of Evidence. "[T]estimony by a properly trained police officer with respect to the administration and results of the horizontal gaze nystagmus test are admissible without need for further scientific evidence."
State v. Murphy, 451 N.W.2d 154, 158 (Iowa 1990).

II. Police Officer Testimony Needed to Admit HGN Test Result

Police officer may testify about HGN test results under Rule 702 if the officer is properly trained to administer the test and objectively records the results.
Murphy, 451 N.W.2d at 158.

III. Purpose and Limits of HGN

HGN test results may be used as an indicator of intoxication. *Murphy*, 451 N.W.2d at 158.

Kansas

I. Evidentiary Admissibility

HGN must meet *Frye* standard of admissibility and a *Frye* hearing is required at the trial level. There was no *Frye* hearing conducted and the appellate court refused to make a determination based on the record it had. *State v. Witte*, 836 P.2d 1110, 1121 (Kan. 1992).

HGN test has not achieved general acceptance within the relevant scientific community and its exclusion was appropriate. *State v. Chastain*, 960 P.2d 756 (Kan. 1998).

II. Police Officer Testimony Needed to Admit HGN Test Result

The Court did not address this issue.

III. Purpose and Limits of HGN

The Court did not address this issue.

Kentucky

I. Evidentiary Admissibility

HGN test results admitted due to defendant's failure to object.
Commonwealth v. Rhodes, 949 S.W.2d 621, 623 (Ky. Ct. App. 1996).

II. Police Officer Testimony Needed to Admit HGN Test Result

The Court did not address this issue.

III. Purpose and Limits of HGN

The Court did not address this issue.

Louisiana

I. Evidentiary Admissibility

HGN meets *Frye* standard of admissibility and with proper foundation my be admitted as evidence of intoxication.

State v. Breitung, 623 So. 2d 23, 25-6 (La. Ct. App. 1993).
State v. Regan, 601 So. 2d 5, 8 (La. Ct. App. 1992).
State v. Armstrong, 561 So. 2d 883, 887 (La. Ct. App. 1990).

The standard of admissibility for scientific evidence is currently the Louisiana Rules of Evidence.
State v. Foret, 628 So. 2d 1116 (La. 1993).

II. Police Officer Testimony Needed to Admit HGN Test Result

Police officer may testify as to training in HGN procedure, certification in the administration of HGN test and that the HGN test was properly administered. *Armstrong*, 561 So. 2d at 887.

III. Purpose and Limits of HGN

The HGN test may be used by the officer "to determine whether or not he [needs] to 'go any further' and proceed with other field tests."
Breitung, 623 So. 2d at 25.

HGN test results may be admitted as evidence of intoxication.
Armstrong, 561 So. 2d at 887.

Maine

I. Evidentiary Admissibility

Because the HGN test relies on greater scientific principles than other field sobriety tests, the reliability of the test must first be established. Either *Daubert* or *Frye* standard must be met.
State v. Taylor, 694 A.2d 907, 912 (Me. 1997).

The Maine Supreme Court took judicial notice of the reliability of the HGN test to detect impaired drivers.
Taylor, 694 A.2d at 910.

II. Police Officer Testimony Needed to Admit HGN Test Result

"A proper foundation shall consist of evidence that the officer or administrator of the HGN test is trained in the procedure and the [HGN] test was properly administered."
Taylor, 694 A.2d at 912.

III. Purpose and Limits of HGN

HGN test results may only be used as "evidence of probable cause to arrest without a warrant or as circumstantial evidence of intoxication. The HGN test may not be used by an officer to quantify a particular blood alcohol level in an individual case."
Taylor, 694 A.2d at 912.

Maryland

I. Evidentiary Admissibility

HGN is scientific and must satisfy the *Frye*/*Reed* standard of admissibility. The Court of Appeals took judicial notice of HGN's reliability and its acceptance in the relevant scientific communities.
Schultz v. State, 664 A.2d 60, 74 (Md. Ct. Spec. App. 1995).

II. Police Officer Testimony Needed to Admit HGN Test Result

Police officer must be properly trained or certified to administer the HGN test. [NOTE: In *Schultz*, the police officer failed to articulate the training he received in HGN testing and the evidence was excluded.]
Schultz, 664 A.2d at 77.

III. Purpose and Limits of HGN

HGN testing may not be used to establish a specific blood alcohol level.
Wilson v. State, 723 A.2d 494 (Md. Ct. Spec. App. 1999).

Massachusetts

I. Evidentiary Admissibility

HGN is scientific and is admissible on a showing of <u>either</u> general acceptance in the scientific community or reliability of the scientific theory. *See Commonwealth v. Lanigan*, 641 N.E.2d 1342 (Mass. 1994). HGN test results are inadmissible until the Commonwealth introduces expert testimony to establish that the HGN test satisfies one of these two standards. *Commonwealth v. Sands*, 675 N.E.2d 370, 373 (Mass. 1997).

II. Police Officer Testimony Needed to Admit HGN Test Result

"[T]here must be a determination as to the qualification of the individual administering the HGN test and the appropriate procedure to be followed." In this case there was no testimony as to these facts, thus denying the defendant the opportunity to challenge the officer's qualifications and administration of the test. *Sands*, 675 N.E.2d at 373.

III. Purpose and Limits of HGN

The Court did not address this issue.

Michigan

I. Evidentiary Admissibility

Court found that HGN test is scientific evidence and is admissible under the *Frye* standard of admissibility.
State v. Berger, 551 N.W.2d 421, 424 (Mich. Ct. App. 1996).

II. Police Officer Testimony Needed to Admit HGN Test Result

Only foundation necessary for the introduction of HGN test results is evidence that the police officer properly performed the test and that the officer administering the test was qualified to perform it.
Berger, 551 N.W.2d at 424.

III. Purpose and Limits of HGN

HGN test results are admissible to indicate the presence of alcohol.
Berger, 551 N.W.2d at 424 n.1.

Minnesota

I. Evidentiary Admissibility

Court found that HGN meets the *Frye* standard of admissibility.
State v. Klawitter, 518 N.W.2d 577, 585 (Minn. 1994).

II. Police Officer Testimony Needed to Admit HGN Test Result

Police officers must testify about their training in and experience with the HGN test.
See generally Klawitter, 518 N.W.2d at 585-86.

III. Purpose and Limits of HGN

HGN admissible as evidence of impairment as part of a Drug Evaluation Examination in the prosecution of a person charged with driving while under the influence of drugs.
See generally Klawitter, 518 N.W.2d at 585.

Mississippi

I. Evidentiary Admissibility

HGN is a scientific test. However, it is not generally accepted within the relevant scientific community and is inadmissible at trial in the State of Mississippi.
Young v. City of Brookhaven, 693 So.2d 1355, 1360-61 (Miss. 1997).

II. Police Officer Testimony Needed to Admit HGN Test Result

Police officers cannot testify about the correlation between the HGN test and precise blood alcohol content.
Young, 693 So.2d at 1361.

III. Purpose and Limits of HGN

HGN test results are admissible only to prove probable cause to arrest.
Young, 693 So.2d at 1361.

HGN test results cannot be used as scientific evidence to prove intoxication or as a mere showing of impairment. *Young*, 693 So.2d at 1361.

Missouri

I. Evidentiary Admissibility

Court found that HGN test meets the *Frye* standard of admissibility. *State v. Hill*, 865 S.W.2d 702, 704 (Mo. Ct. App. 1993), *rev'd on other grounds, State v. Carson*, 941 S.W.2d 518, 520 (Mo. 1997).

II. Police Officer Testimony Needed to Admit HGN Test Result

Police officer must be adequately trained and able to properly administer the test.
Hill, 865 S.W.2d at 704.

See also, *Duffy v. Director of Revenue*, 966 S.W. 2d 372 (Mo. Ct. App. 1998). HGN not admitted at trial because the administering officer was not aware of hot to properly score the test and interpret its results.

III. Purpose and Limits of HGN

HGN can be admitted as evidence of intoxication. *Hill*, 865 S.W.2d at 704.

Montana

I. Evidentiary Admissibility

Court found that HGN is neither new nor novel; thus, *Daubert* does not apply. Court still finds that HGN must meet the state's rules of evidence that are identical to the Federal Rules of Evidence.
Hulse v. DOJ, Motor Vehicle Div., 961 P.2d 75, 88 (Mont. 1998).

II. Police Officer Testimony Needed to Admit HGN Test Result

The court held that before an arresting officer may testify as to HGN results, a proper foundation must show that the officer was properly trained to administer the HGN test and that he administered the test in accordance with this training. Before the officer can testify as to the correlation between alcohol and nystagmus, a foundation must be established that the officer has special training in the underlying scientific basis of the HGN test.
Hulse, 961 P.2d 75 (Mont. 1998).

See Also, *State v. Crawford*, 315 Mont. 480, 68 P.3d 848 (2003), in which the court ruled that the officer's credentials were sufficient to establish his expertise, along with evidence that he was previously qualified as an expert. They relied on *Russette* (2002 MT 200), stating that to establish an expert's qualifications, the proponent of the testimony must show that the expert has special training or education and adequate knowledge on which to base an opinion.

III. Purpose and Limits of HGN

HGN test results admissible as evidence of impairment.
State v. Clark, 762 P.2d 853, 856 (Mont. 1988).

Nebraska

I. Evidentiary Admissibility

HGN meets the *Frye* standard for acceptance in the relevant scientific communities, and when the test is given in conjunction with other field sobriety tests, the results are admissible for the limited purpose of establishing impairment that may be caused by alcohol.
***State** v. Baue*, 607 N.W.2d 191 (Neb. 2000)

II. Police Officer Testimony Needed to Admit HGN Test Result

A police officer may testify to the results of **HGN** testing if it is shown that the officer has been adequately trained in the administration and assessment of the **HGN** test and has conducted the testing and assessment in accordance with that training. ***State** v. Baue*, 607 N.W.2d 191 (Neb. 2000)

III. Purpose and Limits of HGN

"Testimony concerning **HGN** is admissible on the issue of impairment, provided that the prosecution claims no greater reliability or weight for the **HGN** evidence than it does for evidence of the defendant's performance on any of the other standard field sobriety tests, and provided further that the prosecution makes no attempt to correlate the **HGN** test result with any particular blood-alcohol level, range of blood-alcohol levels, or level of impairment."
***State** v. Baue*, 607 N.W.2d 191 (Neb. 2000) (quoting *Ballard v. State*, 955 P.2d 931, 940 (Alaska App. 1998))

New Hampshire

I. Evidentiary Admissibility

In *State v. Dahoo* (Dec. 20, 2002), the N.H. Supreme Court ruled that the HGN test is admissible under N.H. Rule of Evidence 702 and *Daubert* for the limited purpose of providing circumstantial evidence of intoxication. HGN test is a scientifically reliable and valid test.

N.H. Supreme Court ruled their findings binding in *Dahoo* and that courts "will not be required to establish the scientific reliability of the HGN."

II. Police Officer Testimony Needed to Admit HGN Test Result
"Since we have already determined that the scientific principles underlying the HGN test are reliable, a properly trained and qualified police officer may introduce the HGN test results at trial." *State v. Dahoo,* 2002 N.H. LEXIS 179.

III. Purpose and Limits of HGN

"HGN results cannot be introduced at trial for the purpose of establishing a defendant's BAC level….[T]he results are not sufficient alone to establish intoxication." *State v. Dahoo,* Id.

New Jersey

I. Evidentiary Admissibility

In New Jersey, the party offering the results of a scientific procedure into evidence must comply with Frye and show that the procedure is generally accepted in the relevant scientific communities. A party may prove this general acceptance via "(1) testimony of knowledgeable experts[,] (2) authoritative scientific literature[, or] (3) [p]ersuasive judicial decision." Based on the testimony of Dr. Marcelline Burns and Dr. Jack Richman, the Court found the HGN test to be generally accepted and the results thus admissible. The Court also noted the "significant number" of jurisdictions that have accepted the HGN test as admissible scientific evidence. ***State v. Maida,*** 2000 N.J. Super. LEXIS 276 (N.J. Super. Ct. Law Div. 2000).

***But See**, *State v. Doriguzzi*, 760 A.2d 336 (N.J. Super. 2000), which held that HGN is scientific evidence that must meet Frye Standard. However, in each trial, sufficient foundation evidence must be laid by expert testimony to assure defendants that a conviction for DUI, when based in part on HGN testing, is grounded in reliable scientific data. In this case, the appellate court reversed defendant's conviction because at trial no such foundation was presented. The court found that because HGN testing has not achieved general acceptance in the community, it is not a matter of which a court can take judicial notice.

II. Police Officer Testimony Needed to Admit HGN Test Result

The Court did not address this issue.

III. Purpose and Limits of HGN

The Court found the HGN test admissible "as a reliable scientific indicator of likely intoxication."

New Mexico

I. Evidentiary Admissibility

HGN is a scientific test. New Mexico follows the *Daubert* standard, which requires a showing of reliability before scientific evidence can be admitted. The court held that a scientific expert must testify to the underlying scientific reliability of HGN and that a police officer cannot qualify as a scientific expert. Because the State failed to present sufficient evidence regarding the HGN test's reliability, the court remanded the case stating it would be appropriate for the trial court, on remand, to make the initial determination of whether HGN testing satisfies *Daubert*. In addition, the court found HGN to be "beyond common and general knowledge" and declined to take judicial notice of HGN reliability.
State v. Torres, 976 P.2d 20 (N.M. 1999).

State v. Lasworth, 42 P.3d 844 (Ct. App. N.M. 2001), cert. denied (2002). Results of HGN test were inadmissible at trial (State v. Torres, 976 P.2d 20 (N.M. 1999). The State needed to prove that HGN was both valid and reliable.

State called Dr. Marceline Burns as a witness (reliability) but did not call an expert in a discipline such as biology or medicine to explain how the amount of alcohol a person consumes correlates with HGN (validity).

II. Police Officer Testimony Needed to Admit HGN Test Result

Police officers can qualify as non-scientific experts based on their training and experience. Non-scientific experts may testify about the administration of the test and specific results of the test provided another scientific expert first establishes the reliability of the scientific principles underlying the test. In order to establish the "technical or specialized knowledge" required to qualify as an expert in the administration of the HGN test, "there must be a showing: (1) that the expert has the ability and training to administer the HGN test properly, and (2) that the expert did, in fact, administer the HGN test properly at the time and upon the person in question."
State v. Torres, 976 P.2d 20 (N.M. 1999).

State v. Lasworth, 42 P.3d 844 (Ct. App. N.M. 2001), cert. denied (2002). Court believed that state had to show that presence of HGN (BAC above .08) correlates with diminishment of driver's mental or physical driving skills (which it failed to do) & a correlation between presence of HGN and BAC above or below .08 (which it did through testimony of Dr. Burns). Court did not preclude use of results of HGN to establish probable cause for arrest or to establish grounds for administering a chemical BAC test.

III. Purpose and Limits of HGN

The Court did not address this issue.

New York

I. Evidentiary Admissibility

Prue holds that HGN test results are admissible under *Frye* standard of "general acceptance." *People v. Prue*, Indictment No. I-5-2001, Franklin County Court (November 2001).

In *Gallup*, the court said that it was only necessary to conduct a foundational inquiry into the techniques and the tester's qualifications for admissibility. *People v. Gallup*, Memorandum and order #13094, 302 A.D.2d 681 (3rd Dept)(2003).

The Court allowed the introduction of HGN and the results because it was properly administered and the burden of establishing that HGN is a reliable indicator of intoxication is generally accepted in the relevant scientific community was satisfied. *People v. William Miley*, NYLJ 12/6/02 p.30 col. 6 (Nassau Co. Ct 2002).

II. Police Officer Testimony Needed to Admit HGN Test Result

The People must lay a proper evidentiary foundation in order for HGN results to be admissible at trial.

III. Purpose and Limits of HGN

The Court held that HGN is generally accepted in the relevant scientific community as a reliable indicator of intoxication.

North Carolina

I. Evidentiary Admissibility

HGN is a scientific test. It "does not measure behavior a lay person would commonly associate with intoxication but rather represents specialized knowledge that must be presented to the jury by a qualified expert." As a result, "until there is sufficient scientifically reliable evidence as to the correlation between intoxication and nystagmus, it is improper to permit a lay person to testify as to the meaning of HGN test results." *State v. Helms*, 504 S.E.2d 293 (N.C. 1998).

II. Police Officer Testimony Needed to Admit HGN Test Result
Testimony of one police officer, whose training consisted of a "forty hour training class dealing with the HGN test", was inadequate foundation for admission of HGN test results.
Helms, 504 S.E.2d 293 (N.C. 1998).

III. Purpose and Limits of HGN
HGN test results are evidence of impairment. *Helms*, 504 S.E.2d 293 (N.C. 1998).

North Dakota

I. Evidentiary Admissibility

Court found that HGN test is admissible as a standard field sobriety test.
City of Fargo v. McLaughin, 512 N.W.2d 700, 706 (N.D. 1994).

II. Police Officer Testimony Needed to Admit HGN Test Result

Police officer must testify as to training and experience and that the test was properly administered.
City of Fargo, 512 N.W.2d at 708.

III. Purpose and Limits of HGN

" . . . HGN test results admissible only as circumstantial evidence of intoxication, and the officer may not attempt to quantify a specific BAC based upon the HGN test."
City of Fargo, 512 N.W.2d at 708.

Ohio

I. Evidentiary Admissibility

HGN test is objective in nature and does not require an expert interpretation.
State v. Nagel, 506 N.E.2d 285, 286 (Ohio Ct. App. 1986).

Court determined that HGN was a reliable indicator of intoxication without specifically ruling on whether HGN meets *Frye* or some other standard of admissibility.
State v. Bresson, 554 N.E.2d 1330, 1334 (Ohio 1990).

Court held that SFSTs, including HGN, must be administered in *strict compliance* with NHTSA's directives in order for the test results to be admissible. *State v. Homan*, 732 N.E.2d 952 (Ohio 2000).

However, the Ohio Supreme Court ruled that the Homan decision does not preclude officers from testifying to observations even if SFSTs are barred. *Ohio v. Schmitt*, 101 Ohio St. 3d 79, 2004.

II. Police Officer Testimony Needed to Admit HGN Test Result

Police officer need only testify to training in HGN procedure, knowledge of the test and ability to interpret results. *Bresson*, 554 N.E.2d at 1336.

III. Purpose and Limits of HGN

HGN can be used to establish probable cause to arrest and as substantive evidence of a defendant's guilt or innocence in a trial for DUI, but not to determine defendant's BAC.
Bresson, 554 N.E.2d at 1336.

Oklahoma

I. Evidentiary Admissibility

HGN test results excluded because state failed to lay adequate foundation regarding HGN's scientific admissibility under the *Frye* standard of admissibility. Police officer's testimony alone was insufficient.
Yell v. State, 856 P.2d 996, 996-97 (Okla. Crim. App. 1993).

The *Daubert* rationale replaces the *Frye* standard as the admissibility standard for scientific evidence.
Taylor v. State, 889 P.2d 319, 328-29 (Okla. Crim. App. 1995).

II. Police Officer Testimony Needed to Admit HGN Test Result

Police officer testified to training on how to administer HGN test and how the test was administered in this case. Officer also testified as to his training in analyzing HGN test results.
Yell, 856 P.2d at 997.

III. Purpose and Limits of HGN

If HGN testing was found to satisfy the *Frye* standard of admissibility, HGN test results would be considered in the same manner as other field sobriety test results. HGN test results are inadmissible as scientific evidence creating a presumption of intoxication.
Yell, 856 P.2d at 997.

Oregon

I. Evidentiary Admissibility

HGN test results are admissible under the Oregon Rules of Evidence. HGN test results are scientific in nature, are relevant in a DUI trial, and are not unfairly prejudicial to the defendant.
State v. O'Key, 899 P.2d 663, 687 (Or. 1995).

II. Police Officer Testimony Needed to Admit HGN Test Result

"Admissibility is subject to a foundational showing that the officer who administered the test was properly qualified, that the test was administered properly, and that the test results were recorded accurately." *O'Key*, 899 P.2d at 670.

III. Purpose and Limits of HGN

"… HGN test results are admissible to establish that a person was under the influence of intoxicating liquor, but is not admissible…to establish a person's BAC…." *O'Key*, 899 P.2d at 689-90.

Officer may not testify that, based on HGN test results, the defendant's BAC was over .10.
State v. Fisken, 909 P.2d 206, 207 (Or. Ct. App. 1996).

Pennsylvania

I. Evidentiary Admissibility

The state laid an inadequate foundation for the admissibility of HGN under the *Frye*/*Topa* standard.
Commonwealth v. Moore, 635 A.2d 625, 629 (Pa. Super. Ct. 1993).
Commonwealth v. Apollo, 603 A.2d 1023, 1028 (Pa. Super. Ct. 1992).
Commonwealth v. Miller, 532 A.2d 1186, 1189-90 (Pa. Super. Ct. 1987).

Testimony of police officer is insufficient to establish scientific reliability of HGN test.
Moore, 635 A.2d at 692.
Miller, 532 A.2d at 1189-90.

Testimony of behavioral optometrist did not establish general acceptance of HGN test.
Apollo, 603 A.2d at 1027-28.

II. Police Officer Testimony Needed to Admit HGN Test Result

County detective certified as HGN instructor. Court did not comment on whether this would be enough foundation to allow the detective to testify about HGN test results. *Moore*, 635 A.2d 629.

Police officer had one-day course on HGN. Court did not comment on whether this would be enough foundation to allow the officer to testify about HGN test results. *Miller*, 603 A.2d at 1189.

III. Purpose and Limits of HGN

Not addressed by court.

South Carolina

I. Evidentiary Admissibility

HGN admissible in conjunction with other field sobriety tests. By implication, HGN is not regarded as a scientific test. *State v. Sullivan*, 426 S.E.2d 766, 769 (S.C. 1993).

II. Police Officer Testimony Needed to Admit HGN Test Result

Police officer given twenty hours of HGN training. *Sullivan*, 426 S.E.2d at 769.

III. Purpose and Limits of HGN

HGN test results admissible "to elicit objective manifestations of soberness or insobriety . . . [E]vidence from HGN tests is not conclusive proof of DUI. A positive HGN test result is to be regarded as merely circumstantial evidence of DUI. Furthermore, HGN test shall not constitute evidence to establish a specific degree of blood alcohol content." *Sullivan*, 426 S.E.2d at 769.

South Dakota

I. Evidentiary Admissibility

If it can be shown that a horizontal gaze nystagmus test was properly administered by a trained officer, such evidence should be admitted for a jury to consider at trial along with evidence of the other accepted field sobriety tests administered in South Dakota. *STATE v. HULLINGER*, 2002 SD 83; 649 N.W.2d 253 (S.D.S.Ct. 2002); 2002 S.D. LEXIS 99

II. Police Officer Testimony Needed to Admit HGN Test Result

Officer may testify if properly trained and test properly administered. At the pretrial hearing, the State presented three witnesses: 1) Monte Farnsworth, training director for the Office of Highway Safety at the Division of Criminal Investigation Law Enforcement Training Academy; 2) Deputy Ludwig; and 3) Dr. Larry Menning, optometrist and expert witness. South Dakota follows a *Daubert* standard in use of expert witnesses.

III. Purpose and Limits of HGN

The Court did not address this issue.

Tennessee

I. Evidentiary Admissibility

HGN is a scientific test. To be admissible at trial, such evidence must satisfy the requirements of Tenn. Rules of Evidence 702 and 703. State provided an inadequate amount of evidence to allow the court to conclude that HGN evidence meets this standard.
State v. Murphy, 953 S.W.2d 200 (Tenn. 1997).

II. Police Officer Testimony Needed to Admit HGN Test Result

HGN must be offered through an expert witness. To qualify as an expert, a police officer must establish that he is qualified by his "knowledge, skill, experience, training or education" to provide expert testimony to "substantially assist the trier of fact to understand the evidence or determine a fact in issue." Although the court did not rule out the possibility that the officer can be considered an expert, the court set a high level of proof. In this case, the court felt that although the officer had attended law enforcement training in DUI offender apprehension and the HGN test, this training was not enough to establish him as an expert. *State v. Grindstaff,* 1998 Tenn. Crim. App. Lexis 339 (March 23, 1998).

III. Purpose and Limits of HGN

The Court did not address this issue.

Texas

I. Evidentiary Admissibility

HGN admissible under the Texas Rules of Evidence. *Emerson v. State*, 880 S.W.2d 759, 769 (Tex. Crim. App. 1994).

II. Police Officer Testimony Needed to Admit HGN Test Result

A police officer must qualify as an expert on the HGN test, specifically concerning its administration and technique, before testifying about a defendant's performance on the test. Proof that the police officer is certified in the administration of the HGN test by the Texas Commission on Law Enforcement Officer Standards and Education satisfies this requirement.
Emerson, 880 S.W.2d at 769.

III. Purpose and Limits of HGN

HGN admissible to prove intoxication, but not accurate enough to prove precise BAC.
Emerson, 880 S.W.2d at 769.

Utah

I. Evidentiary Admissibility

HGN test admissible as other field sobriety test. Court reserved judgment as to the scientific reliability of HGN. *Salt Lake City v. Garcia*, 912 P.2d 997, 1001 (Utah Ct. App. 1996).

II. Police Officer Testimony Needed to Admit HGN Test Result

Police officer need only testify as to training, experience and observations when HGN admitted as a field test. *Garcia*, 912 P.2d at 1001.

III. Purpose and Limits of HGN

Admissible as any other field sobriety test. *Garcia*, 912 P.2d at 1000-01.

Washington

I. Evidentiary Admissibility

It is "undisputed" in the relevant scientific communities that "an intoxicated person will exhibit nystagmus". HGN testing is not novel and has been used as a field sobriety test for "decades" and is administered the same whether investigating alcohol impairment or drug impairment. Thus, the use of HGN in drug and alcohol impaired driving cases is acceptable.
State v. Baity, 140 Wn.2d 1, 991 P.2d 1151 (Wash. 2000).

"[T]he *Frye* standard applies to the admission of evidence based on HGN testing, unless . . . the State is able to prove that it rests on scientific principles and uses techniques which are not 'novel' and are readily understandable by ordinary persons." The state failed to present any evidence to this fact and the court declined to take judicial notice of HGN. *State v. Cissne*, 865 P.2d 564, 569 (Wash. Ct. App. 1994).

II. Police Officer Testimony Needed to Admit HGN Test Result

The Court did not address this issue.

III. Purpose and Limits of HGN

The Court did not address this issue.

West Virginia

I. Evidentiary Admissibility

The state did not present evidence for the court to reach "the question of whether the HGN test is sufficiently reliable to be admissible." However, the court did conclude "that even if the reliability of the HGN test is demonstrated, an expert's testimony as to a driver's performance on the test is admissibile only as evidence that the driver was under the influence. Estimates of blood alcohol content based on the HGN test are inadmissible." *State v. Barker,* 366 S.E.2d 642, 646 (W. Va. 1988).

The West Virginia Supreme Court modified *State v. Barker* to the extent that the *Daubert* analysis of FRE 702 is applicable to the question of admissibility of expert testimony under the West Virginia Rules of Evidence Rule 702. *Wilt v. Buracker,* 443 S.E. 2d 196 (W.Va. 1993).

II. Police Officer Testimony Needed to Admit HGN Test Result

Police officer's training consisted of a one-day, eight-hour training session conducted by the state police. Officer testified to giving the HGN test about 100 times. Court did not reach question of whether this would be enough to allow the officer to testify about the HGN test results.
Barker, 366 S.E.2d at 644.

III. Purpose and Limits of HGN

HGN test results admissible to show probable cause in a civil hearing.
Muscatell v. Cline, 474 S.E.2d 518, 525 (W. Va. 1996).
Boley v. Cline, 456 S.E.2d 38, 41 (W. Va. 1995).

"[I]f the reliability of the HGN test is demonstrated, an expert's testimony as to a driver's performance on the test is admissible only as evidence that the driver was under the influence," the same as other field sobriety tests. *Barker*, 366 S.E.2d at 646.

Wisconsin

I. Evidentiary Admissibility

The court held that the HGN test results are admissible in this case because the test results were not the only evidence. The results were accompanied by the expert testimony of the officer.
State v. Zivcic, 598 N.W.2d 565 (Wisc. Ct. App. 1999). **See also**, *State v. Maxon*, 633 N.W. 2d 278 (Wisc. Ct. App. 2001)

II. Police Officer Testimony Needed to Admit HGN Test Result

A police officer who is properly trained to administer and evaluate the HGN test can testify to the test results. A second expert witness is not needed. *State v. Zivcic*, 598 N.W.2d 565 (Wisc. Ct. App. 1999).

III. Purpose and Limits of HGN

The Court did not address this issue.

Wyoming

I. Evidentiary Admissibility

SFSTs, including HGN, are admissible to establish probable cause when administered in *substantial compliance* with NHTSA guidelines. Strict compliance is not necessary. The court took judicial notice of the number of states that allow HGN evidence on the basis of the "officer's training, experience and ability to administer the test". *Smith v. Wyoming*, 2000 Wyo. LEXIS 202 (Wyo. October 4, 2000).

II. Police Officer Testimony Needed to Admit HGN Test Result

A police officer that is properly trained to administer and evaluate the HGN test can testify to HGN results.
Smith v. Wyoming, 2000 Wyo. LEXIS 202 (Wyo. October 4, 2000).

III. Purpose and Limits of HGN

HGN test results are admissible to show probable cause.
Smith v. Wyoming, 2000 Wyo. LEXIS 202 (Wyo. October 4, 2000).

United States

I. Evidentiary Admissibility

U.S. V. Eric D. Horn, 185 F. Supp. 2d 530 (D. Maryland 2002) In this case, U.S. District Court in Maryland made the first application of the newly revised FRE 702 to the HGN and other SFSTs.

Results of properly administered WAT, OLS and HGN, SFSTs may be admitted into evidence in a DWI/DUI case only as circumstantial evidence of intoxication or impairment but not as direct evidence of specific BAC.

Officer must first establish his qualifications to administer the test - training and experience, not opinion about accuracy rate of test or causal connection between alcohol consumption and exaggerated HGN.

Government may prove causal connection by: judicial notice, expert testimony, or learned treatise. Horn may prove other causes by: judicial notice, cross-examination of state's expert, defense expert, or learned treatise.

U.S. V. Daras, 1998 WL 726748 (4th Cir. 1998)(Unpublished opinion). WAT and OLS were not scientific so no expert needed. Court would have applied *Daubert* to HGN test, but there was no need to because breathalyzer, WAT and OLS were sufficient.

HGN test was admitted as part of series of field tests. Its admission was not challenged on appeal.
U.S. v. Van Griffin, 874 F.2d 634 (9th Cir. 1989).

II. Police Officer Testimony Needed to Admit HGN Test Result

Foundation for HGN must address validity & reliability under FRE 702. In *Horn*, prosecution had a medical doctor and a police officer, but defense used behavioral psychologist to attack HGN literature of Dr. Marceline Burns and others.

III. Purpose and Limits of HGN

SFSTs may be admitted into evidence in a DWI/DUI case only as circumstantial evidence of intoxication or impairment but not as direct evidence of specific BAC. *Horn*.

Properly qualified, Officer may give opinion of intoxication or impairment by alcohol. *Horn.*

Note: The following states were not listed above due to a lack of case law discussion on HGN:
Colorado
Nevada
Rhode Island
Vermont(HGN was mentioned in the context of a refusal being admissible as evidence of probative guilt. State v. Blouin, 168 Vt. 119 (Vt. 1998)
Virginia

Last Update: Jan. 2004

For future updates, please contact:

National Traffic Law Center, 99 Canal Center Plaza, Suite 510, Alexandria, Virginia, 22314
Phone:(703) 549-4253, Fax: 703-836-3195, email: trafficlaw@ndaa-apri.org

Or
Visit there website www.ndaa-apri.org.

ATTACHMENT B

HORIZONTAL GAZE NYSTAGMUS STATE CHART SUMMARY

(Those states in bold have cases directly addressing the admissibility of HGN evidence. Under Section II, a blank box means that a court has not ruled on the issue.)

	AL	**AK**	**AZ**	**AR**	**CA**	**CO**	**CT**	**DE**	DC	**FL**	**GA**
I. Evidentiary admissibility.											
A. Not a scientific test - admissible as a field sobriety test.											
B A scientific test - scientific standard not applicable.				X						X[1]	
C. A scientific test - meets scientific standard.		X	X		X			X			X
D. A scientific test - does not meet scientific standard.											
E. A scientific test - inadequate evidence presented to determine if HGN meets scientific standard.	X						X				
F. Scientific standard state follows:											
1. *Frye* (general acceptance)	X	X	X		X						
2. *Daubert*/FRE (reliability)							X	X			
3. Other											X
II. Police officer may testify about:											
A. HGN's scientific reliability at admissibility hearing.											
B. Correlation between HGN and alcohol at trial.											
C. HGN test results based on training & experience in administration of test.		YES	YES		YES			YES	YES	YES	YES
III. Purpose and limits of HGN test results.											
A. Probable cause determination in criminal hearing.		X	X				X	X			
B. Probable cause determination in civil hearing.								X			
C. Evidence of impairment.		X	X	X	X			X			X
D. Quantify BAC.											
E. Same evidentiary weight as other field tests.				X							

	HI	**ID**	**IL**	**IN**	IA	**KS**	**KY**	**LA**	**ME**	**MD**	**MA**
I. Evidentiary admissibility.											
A. Not a scientific test - admissible as a field sobriety test.					X						
B A scientific test - scientific standard not applicable.											
C. A scientific test - meets scientific standard.	X	X	X					X	X	X	
D. A scientific test - does not meet scientific standard.											
E. A scientific test - inadequate evidence presented to determine if HGN meets scientific standard.						X					X
F. Scientific standard state follows:											
1. *Frye* (general acceptance)			X			X				X	
2. *Daubert/*FRE (reliability)	X	X			X			X	X		X
3. Other											
II. Police officer may testify about:											
A. HGN's scientific reliability at admissibility hearing.											
B. Correlation between HGN and alcohol at trial.		NO									
C. HGN test results based on training & experience in administration of test.	YES	YES	YES	YES	YES			YES	YES	YES	YES
III. Purpose and limits of HGN test results.											
A. Probable cause determination in criminal hearing.	X	X	X	X				X	X		
B. Probable cause determination in civil hearing.			X								
C. Evidence of impairment.		X	X	X	X			X	X		
D. Quantify BAC.											
E. Same evidentiary weight as other field tests.		X			X						

	MI	**MN**	**MS**	**MO**	**MT**	**NE**	NV	**NH**	**NJ**	NM	**NY**
I. Evidentiary admissibility.											
A. Not a scientific test - admissible as a field sobriety test.											
B A scientific test - scientific standard not applicable.					X				X		
C. A scientific test - meets scientific standard.	X	X		X							X
D. A scientific test - does not meet scientific standard.			X					X			
E. A scientific test - inadequate evidence presented to determine if HGN meets scientific standard.						X				X	
F. Scientific standard state follows:											
1. *Frye* (general acceptance)	X	X	X	X		X			X		X
2. *Daubert*/FRE (reliability)								X		X	
3. Other											
II. Police officer may testify about:											
A. HGN's scientific reliability at admissibility hearing.						NO				NO	
B. Correlation between HGN and alcohol at trial.			NO								
C. HGN test results based on training & experience in administration of test.	YES	YES		YES	YES					YES	
III. Purpose and limits of HGN test results.											
A. Probable cause determination in criminal hearing.			X					X			
B. Probable cause determination in civil hearing.											
C. Evidence of impairment.	X	X		X	X						
D. Quantify BAC.											
E. Same evidentiary weight as other field tests.											

	NC	**ND**	**OH**	**OK**	**OR**	**PA**	RI	**SC**	**SD**	TN	**TX**
I. Evidentiary admissibility.											
A. Not a scientific test - admissible as a field sobriety test.		X	X					X	X		
B A scientific test - scientific standard not applicable.											
C. A scientific test - meets scientific standard.					X						X
D. A scientific test - does not meet scientific standard.											
E. A scientific test - inadequate evidence presented to determine if HGN meets scientific standard.	X			X		X				X	
F. Scientific standard state follows:											
1. *Frye* (general acceptance)						X					
2. *Daubert/*FRE (reliability)	X			X	X						X
3. Other										X	
II. Police officer may testify about:											
A. HGN's scientific reliability at admissibility hearing.	NO					NO					
B. Correlation between HGN and alcohol at trial.	YES										
C. HGN test results based on training & experience in administration of test.	YES	YES	YES	YES	YES			YES	YES		YES
III. Purpose and limits of HGN test results.											
A. Probable cause determination in criminal hearing.			X						X		
B. Probable cause determination in civil hearing.											
C. Evidence of impairment.	X	X	X		X			X			X
D. Quantify BAC.											
E. Same evidentiary weight as other field tests.		X	X	X				X			

	UT	VT	VA	**WA**	**WV**	**WI**	**WY**	**US**		**TOTALS**
I. Evidentiary admissibility.										
A. Not a scientific test - admissible as a field sobriety test.	X					X	X			8
B A scientific test - scientific standard not applicable.										4
C. A scientific test - meets scientific standard.										17
D. A scientific test - does not meet scientific standard.				X						3
E. A scientific test - inadequate evidence presented to determine if HGN meets scientific standard.					X			X		12
F. Scientific standard state follows:										
1. *Frye* (general acceptance)				X						16
2. *Daubert*/FRE (reliability)					X			X		16
3. Other										2
II. Police officer may testify about:										
A. HGN's scientific reliability at admissibility hearing.					NO					
B. Correlation between HGN and alcohol at trial.										
C. HGN test results based on training & experience in administration of test.	YES					YES	YES			
III. Purpose and limits of HGN test results.										
A. Probable cause determination in criminal hearing.							X			15
B. Probable cause determination in civil hearing.					X					3
C. Evidence of impairment.					X	X				24
D. Quantify BAC.										
E. Same evidentiary weight as other field tests.	X				X					9

Last update 11/03 *For future updates, please contact the National Traffic Law Center, 99 Canal Center Plaza, Suite 510, Alexandria, Virginia, 22314*
Phone:(703) 549-4253, Fax: 703-836-319

[0] The 3rd District found HGN to be a “quasi-scientific” test. The court held HGN was established and generally accepted in the relevant scientific community and, therefore, it did not have to meet the *Frye* standard. *Williams v. State*, 710 So.2d 24 (Fla. 3rd Dist. Ct. 1998).

SESSION IV

OVERVIEW OF DETECTION NOTE TAKING AND TESTIMONY

SESSION IV

OVERVIEW OF DETECTION, NOTE TAKING AND TESTIMONY

Upon successfully completing this session, the participant 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 <u>DWI detection</u> 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; an obvious equipment or moving violation; behavior that is unusual, but not necessarily illegal; or almost anything else. Initial detection may carry with it an immediate, suspicion that the driver is impaired; or only a slight 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 <u>all</u> 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.

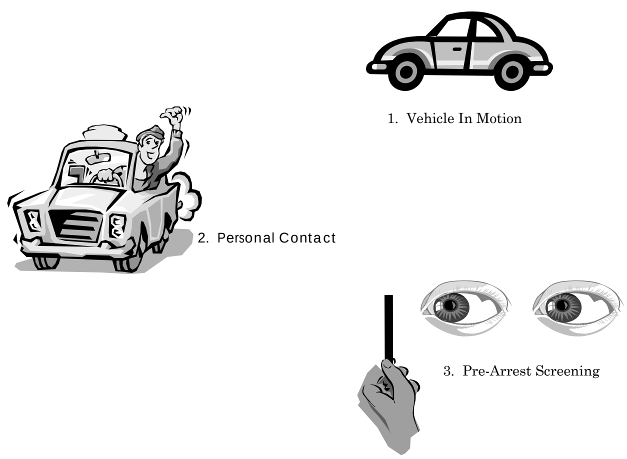
DETECTION PHASES

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.

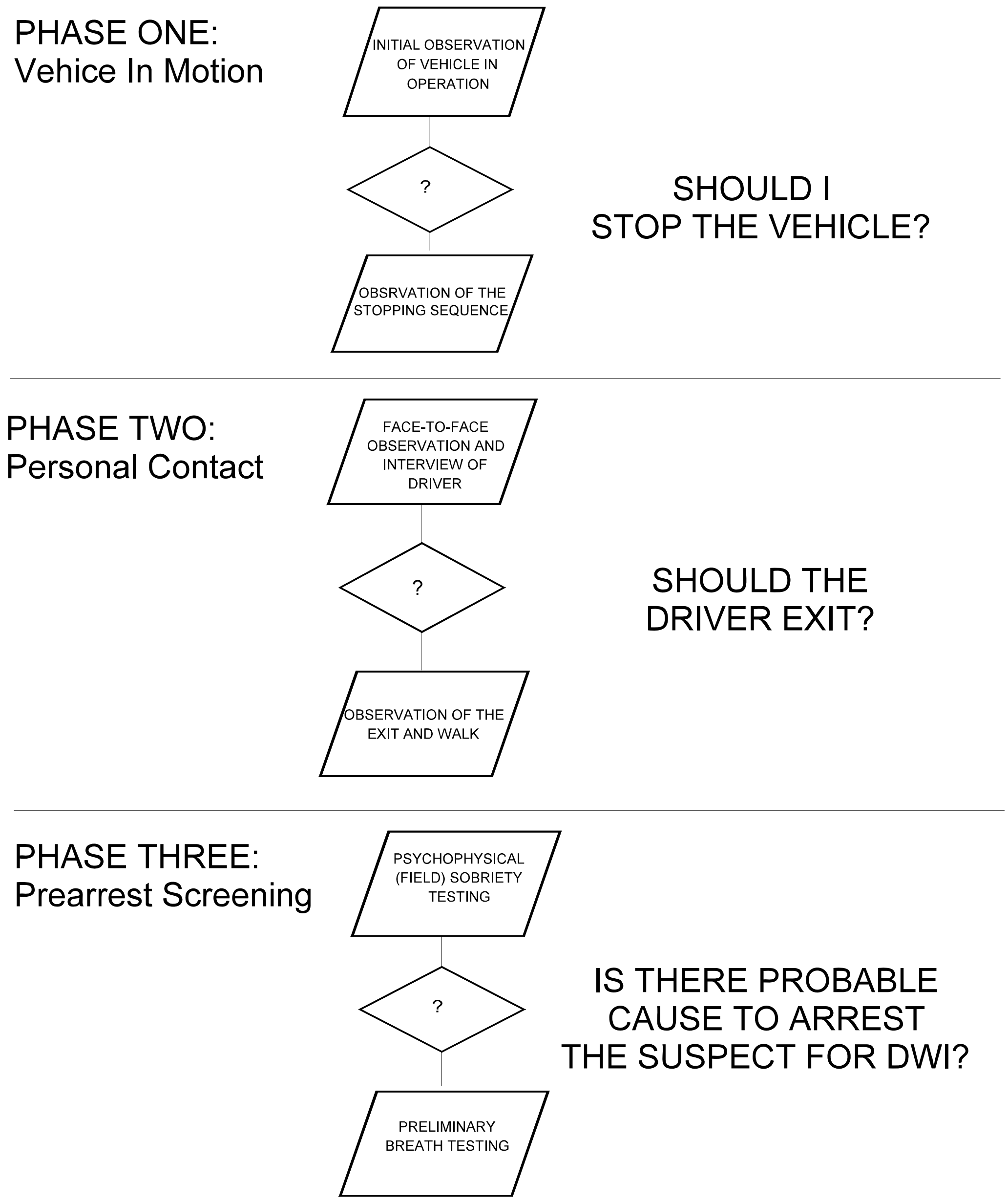
The DWI detection process does not always include all three phases. Sometimes there are DWI detection contacts in which Phase One is absent; that is, cases in which you have no opportunity to observe the vehicle in motion. This may occur at the scene of a crash to which you have been called, at a roadblock, 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 impaired 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



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

In Phase Two: Your first task is to <u>observe and interview the driver</u> 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 <u>observe the driver's exit and walk</u> from the vehicle.

In Phase Three: Your first task is to <u>administer structured, formal psychophysical tests</u>. 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 <u>arrange for (or administer) a Preliminary Breath Test</u>.

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

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

Consider the following examples.

1. <u>Yes - Do It Now</u>

    Phase One: Yes, there are reasonable grounds to <u>stop</u> the vehicle.

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

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

2. <u>Wait - Look for Additional Evidence</u>

    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:

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

Phase Two:

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

Phase Three:

- o Should I administer field sobriety tests to the driver?
- o How does the driver perform those tests?
- o What exactly did the driver do wrong when performing the tests?
- o Do I have probable cause to arrest for DWI?
- o Should I administer a preliminary breath test?
- o 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 reasonable suspicion to stop, investigate and subsequently arrest persons suspected of driving or operating a vehicle while impaired. 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. General Observations provides space to record the suspect's manner of speech, attitude, clothing, etc. Any physical evidence collected should also be noted in this section.

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.

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.

COURTROOM TESTIMONY

Testimonial evidence in DWI cases establishes that the accused was in fact the driver and was impaired. It is only as good as it is clear and concise.
Requirements: Preparation at the scene and prior to trial.

DWI INVESTIGATION FIELD NOTES

I. 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______________ CRASH 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 ____

____

GENERAL OBSERVATIONS

SPEECH ____

ATTITUDE ____

CLOTHING ____

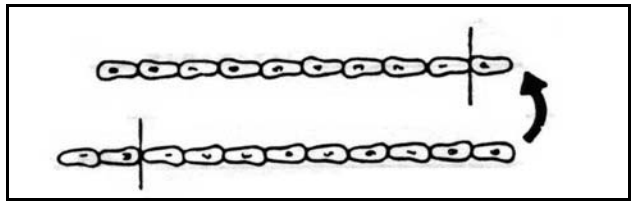
PHYSICAL DEFECTS/DRUGS OR MEDICATIONS USED ____

IV. PRE-ARREST SCREENING

HORIZONTAL GAZE NYSTAGMUS

				LEFT	RIGHT
Equal Pupils	☐ Yes ☐ No	✪	LACK OF SMOOTH PURSUIT		
Equal Tracking	☐ Yes ☐ No	✪	DISTINCT AND SUSTAINED NYSTAGMUS AT MAXIMUM DEVIATION		
Vertical Nystagmus	☐ Yes ☐ No	✪	ONSET OF NYSTAGMUS PRIOR TO 45 DEGREES		
Other (i.e., Resting Nystagmus)____					

WALK AND TURN



INSTRUCTIONS STAGE

CANNOT KEEP BALANCE	
STARTS TOO SOON	

WALKING STAGE

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

IMPROPER TURN (Describe) ____

CANNOT DO TEST (EXPLAIN) ____

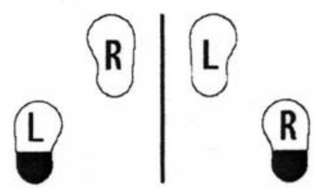
____

OTHER: ____

____

ONE LEG STAND

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



Type of Footwear

OTHER: ____

____

OTHER FIELD SOBRIETY TESTS

NAME OF TEST ____

DESCRIBE PERFORMANCE____

____

NAME OF TEST ____

DESCRIBE PERFORMANCE____

____

NAME OF TEST ____

DESCRIBE PERFORMANCE____

____

PBT (1) (optional) Time:___________ Results:___________	PBT (2) (optional) Time:___________ Results:___________

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 impaired. 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 <u>preparation</u>. 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 interview 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.

- the interview of the suspect

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 ____

____

____

ATTACHMENT(S)

DWI INVESTIGATION FIELD NOTES

I. 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__________ CRASH 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 ____

____

GENERAL OBSERVATIONS

SPEECH ____

ATTITUDE ____

CLOTHING ____

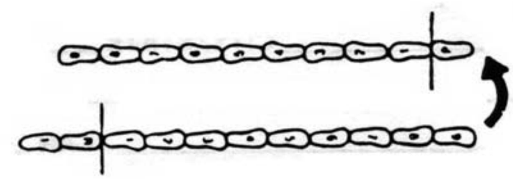
PHYSICAL DEFECTS / DRUGS OR MEDICATIONS USED______________________________

IV. PRE-ARREST SCREENING

HORIZONTAL GAZE NYSTAGMUS

				LEFT	RIGHT
Equal Pupils	☐ Yes ☐ No	✪	LACK OF SMOOTH PURSUIT		
Equal Tracking	☐ Yes ☐ No	✪	DISTINCT AND SUSTAINED NYSTAGMUS AT MAXIMUM DEVIATION		
Vertical Nystagmus	☐ Yes ☐ No	✪	ONSET OF NYSTAGMUS PRIOR TO 45 DEGREES		
Other (i.e., Resting Nystagmus)______________________________					

WALK AND TURN



INSTRUCTIONS STAGE

CANNOT KEEP BALANCE	
STARTS TOO SOON	

WALKING STAGE

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

IMPROPER TURN (Describe) ____

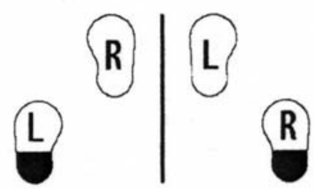
CANNOT DO TEST (EXPLAIN) ____

____

OTHER: ____

____

ONE LEG STAND



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

Type of Footwear

CANNOT DO TEST (EXPLAIN) ____

____

OTHER: ____

____

OTHER FIELD SOBRIETY TESTS

NAME OF TEST ____

DESCRIBE PERFORMANCE____

____

NAME OF TEST ____

DESCRIBE PERFORMANCE____

____

NAME OF TEST ____

DESCRIBE PERFORMANCE____

____

PBT (1) (optional) Time:__________ Results:__________

PBT (2) (optional) Time:__________ Results:__________

SESSION V

PHASE ONE: VEHICLE IN MOTION

SESSION V

PHASE ONE: VEHICLE IN MOTION

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

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

CONTENT SEGMENTS

A. Overview: Tasks and Decision

B. Initial Observations: Visual Cues Impaired Operation

C. Initial Observations: Visual Cues Impaired Operation (Motorcycles)

D. Recognition and Description of Initial Cues

E. Typical Reinforcing Cues of the Stopping Sequence

F. Recognition and Description of Initial and Reinforcing Cues

LEARNING ACTIVITIES

- o Instructor-Led Presentations
- o Video Presentation
- o Video Presentation
- o Instructor-Led Demonstrations
- o Participant's Presentations

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:

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

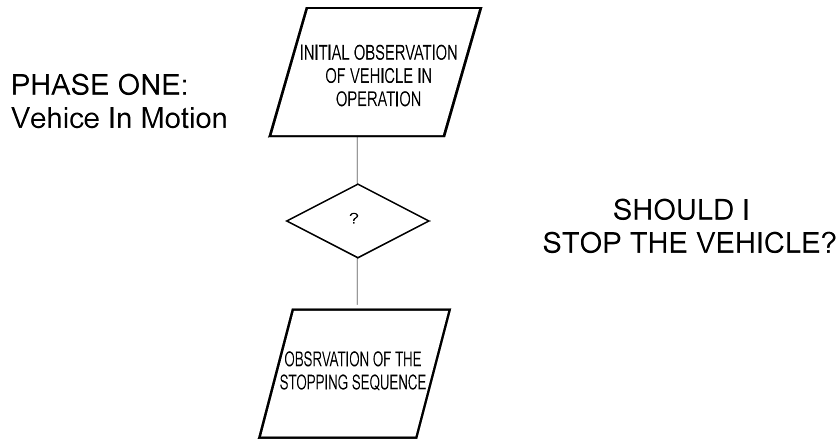
If this initial observation discloses vehicle maneuvers or human behaviors that may be associated with impairment, you may develop an initial suspicion of DWI.

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

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

DWI DETECTION PHASE ONE:
VEHICLE IN MOTION

Phase One Tasks and Decisions



2. INITIAL OBSERVATIONS: VISUAL CUES TO DWI

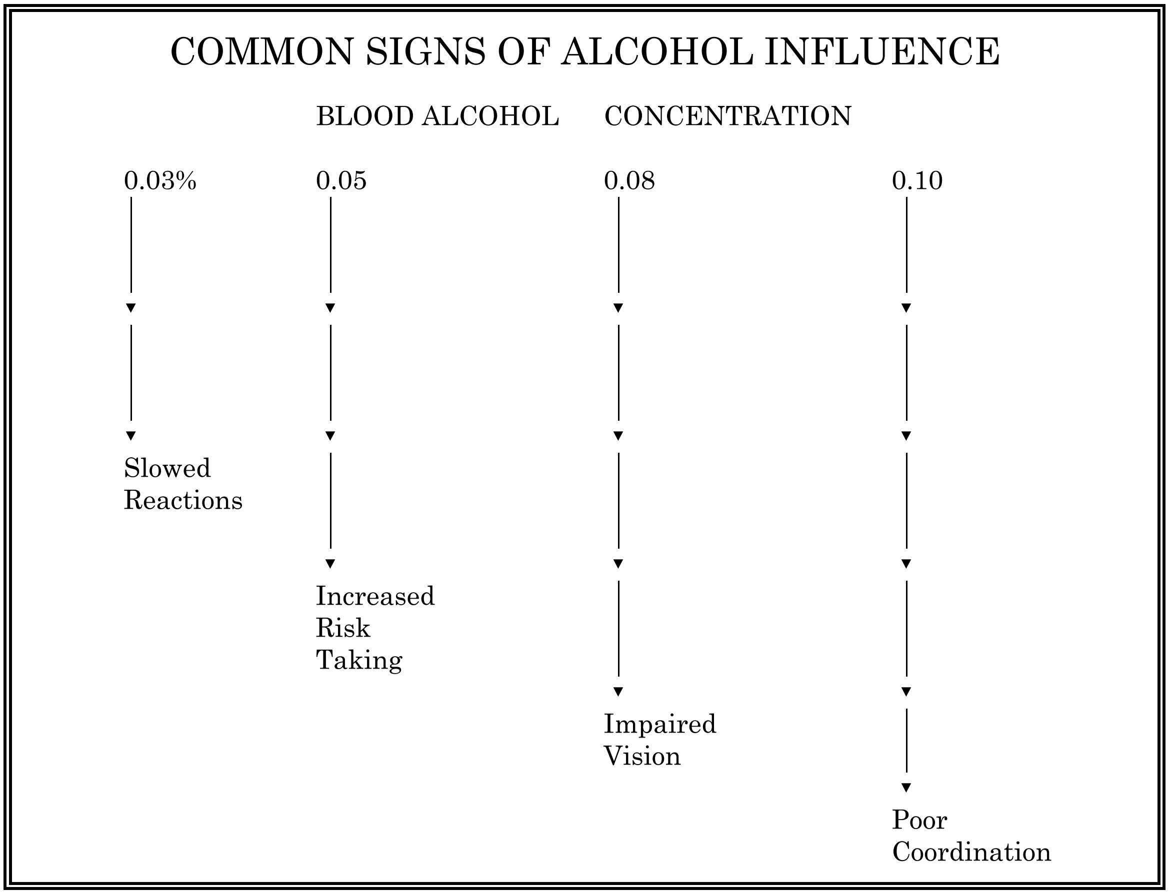
Drivers who are impaired frequently exhibit certain effects or symptoms of impairment. These include:

- 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 impaired, 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 24 cues, each with an associated high probability that the driver exhibiting the cue is impaired. These cues and their associated probabilities are described in the following Special Section, <u>Initial Visual DWI Detection Cues</u>.

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 video.



INITIAL VISUAL DWI DETECTION CUES

Following are 24 cues which police officers may use to detect nighttime impaired drivers. The cues were developed from a list of more than 100 driving cues that have been found to predict BACs of 0.08 percent or greater. Hundreds of law enforcement officers were involved in three field studies involving more than 12,000 enforcement stops. 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.

A pocket-sized booklet, “The Visual Detection of DWI Motorists” [DOT HS 808 677] listing these cues is available free of charge from:

National Highway Traffic Safety Administration - Impaired Driving Division
400 Seventh Street, SW., Room 5118
Washington, DC 20590

VISUAL CUE DESCRIPTIONS

1. PROBLEMS MAINTAINING PROPER LANE POSITION [p=.50-.75]

   A. **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.

   B. **Weaving Across Lane Lines** - Extreme cases of weaving when the vehicle wheels cross the lane lines before correction is made.

   C. **Straddling A Lane Line** - The vehicle is moving straight ahead with the center or lane marker between the left-hand and right-hand wheels.

   D. **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.

   E. **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. The vehicle may drive wide in a curve.

   F. **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.

   G. **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.

2. SPEED AND BRAKING PROBLEMS [p=.45-.70]

   A. **Stopping Problems (too far, too short, too jerky)** - Stopping too far from a curb or at an inappropriate angle. Stopping too short or beyond limit line at an intersection. Stopping with a jerking motion or abruptly.

   B. **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.

   C. **Varying Speed** - Alternating between speeding up and slowing down.

   D. **Slow Speed (10 m.p.h. + Under Limit)** - The observed vehicle is being driving at a speed that is more than 10 MPH below the speed limit.

3. VIGILANCE PROBLEMS [p=.55-.65]

   A. **Driving In Opposing Lanes or Wrong Way On One-Way Street** - 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.

   B. **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.

   C. **Slow Or Failure To Respond To Officer's Signals** - Driver is unusually slow to respond to an officer's lights, siren or hand signals.

   D. **Stopping in Lane for No Apparent Reason** - 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. Impaired drivers might stop in the lane when their capability to interpret information and make decisions becomes impaired. As a consequence, stopping in lane for no apparent reason is likely to occur at intersections or other decision points.

E. **Driving Without Headlights At Night** - The observed vehicle is being driven with both headlights off during a period of the day when the use of headlights is required.

F. **Failure to Signal or Signal Inconsistent with Action** - 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.

4. JUDGMENT PROBLEMS [p=.35-.90]

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

B. **Improper Or Unsafe Lane Change** - Driver taking risks or endangering others. Driver is frequently or abruptly changing lanes without regard to other motorists.

C. **Illegal or Improper Turn (too fast, jerky, sharp, etc.)** - 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.

D. **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.

E. **Stopping Inappropriately In Response To Officer** - 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; for a flashing yellow traffic signal; abruptly as if startled; or in an illegal, dangerous manner.

F. **Inappropriate Or Unusual Behavior (throwing objects, arguing, etc.)** - Throwing objects from the vehicle, drinking in the vehicle, urinating at roadside, arguing without cause, other disorderly actions.

G. **Appearing to be Impaired** - 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:

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

POST STOP CUES $p \geq .85$

1. Difficulty with motor vehicle controls
2. Difficulty exiting the vehicle
3. Fumbling with driver's license or registration
4. Repeating questions or comments
5. Swaying, unsteady, or balance problems
6. Leaning on the vehicle or other object
7. Slurred speech
8. Slow to respond to officer/officer must repeat
9. Provides incorrect information, changes answers
10. Odor of alcoholic beverage from the driver

Ask for Visual Detection of DWI Motorists. (DOT HS 808 677).

VISUAL DETECTION OF DWI MOTORCYCLISTS

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 and/or other 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 video segment <u>Visual Detection of Driving While Intoxicated</u>. In one instance the driver <u>signaled for left turn</u>, <u>but actually turned right</u>. In the other, the driver <u>remained stopped at a green light</u>. In each case the driver was unable 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. <u>But the driver didn't have enough attention left to move the lever in the right direction</u>. Therefore he signaled left, but turned right.

- The second driver was stopped at a traffic light, but <u>he did not have enough attention left to react to the specific color of the light</u>. Therefore he did not respond to the green light.

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

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:

- the ability to recognize evidence of impairment; and
- 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 are exhibited 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. An impaired driver 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. Alcohol impairs the ability to ____________________ among tasks.

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

   a. ____

   b. ____

   c. ____

ATTACHMENT(S)

DWI INVESTIGATION FIELD NOTES

I. 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______________ CRASH 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 ____

____

GENERAL OBSERVATIONS

SPEECH ____

ATTITUDE ____

CLOTHING ____

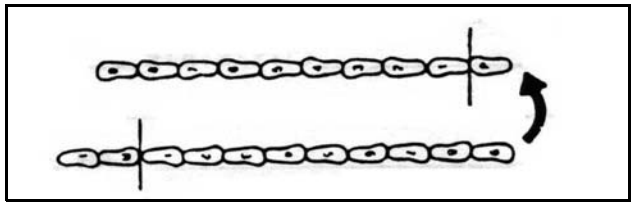
PHYSICAL DEFECTS / DRUGS OR MEDICATIONS USED______________________________

IV. PRE-ARREST SCREENING

HORIZONTAL GAZE NYSTAGMUS

				LEFT	RIGHT
Equal Pupils	☐ Yes ☐ No	✪	LACK OF SMOOTH PURSUIT		
Equal Tracking	☐ Yes ☐ No	✪	DISTINCT AND SUSTAINED NYSTAGMUS AT MAXIMUM DEVIATION		
Vertical Nystagmus	☐ Yes ☐ No	✪	ONSET OF NYSTAGMUS PRIOR TO 45 DEGREES		
Other (i.e., Resting Nystagmus)______________________________					

WALK AND TURN



INSTRUCTIONS STAGE

CANNOT KEEP BALANCE ☐

STARTS TOO SOON ☐

WALKING STAGE

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

IMPROPER TURN (Describe) ____________________

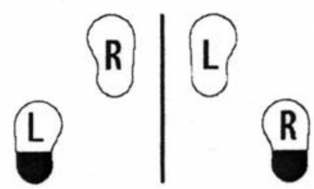
CANNOT DO TEST (EXPLAIN) ____________________

____

OTHER: ____________________

____

ONE LEG STAND



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

Type of Footwear

CANNOT DO TEST (EXPLAIN) ____________________

____

OTHER: ____________________

____

OTHER FIELD SOBRIETY TESTS

NAME OF TEST ____________________

DESCRIBE PERFORMANCE____________________

____

NAME OF TEST ____________________

DESCRIBE PERFORMANCE____________________

____

NAME OF TEST ____________________

DESCRIBE PERFORMANCE____________________

____

PBT (1) (optional) Time:__________ Results:__________

PBT (2) (optional) Time:__________ Results:__________

ATTACHMENT B

The Detection of DWI at BACs Below 0.10

Final Report

Submitted to:
U.S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION

Jack Stuster, PhD, CPE
Project Director

12 September 1997

ANACAPA SCIENCES, INC.
P.O. Box 519
Santa Barbara, California 93102
(805) 966-6157

Executive Summary

This report documents the research activities and presents the results of a study conducted for the National Highway Traffic Safety Administration (NHTSA) to identify driving and other behavioral cues that are associated with blood alcohol concentrations (BACs) below the 0.10 level. The ultimate objective of the research has been to develop training materials to assist law enforcement officers in the accurate detection of motorists who are driving while impaired (DWI).

Description of the Research

The research and development project was composed of 13 major project tasks, conducted in two phases. During Phase I, a work plan was developed to guide all subsequent tasks, a comprehensive review of the low BAC literature was performed, interviews were conducted with DWI experts from across the United States, a data base of low BAC arrest reports was assembled, and two field studies were conducted. The analysis of archival, interview, arrest report, and field data collected by observers led to the identification of 34 driving cues and 10 post-stop cues for further evaluation.

Five law enforcement agencies participated in the second of the field studies, known as the preliminary field study, by recording the driving and post-stop cues observed for all enforcement stops, regardless of the disposition of the stop; the BACs of all drivers who exhibited objective signs of having consumed alcohol also were recorded. By collecting data about all enforcement stops that were made, it was possible to calculate the proportions of the stops in which specific cues were found in association with various BAC levels. All archival, interview, and field study data were analyzed, and recommendations for draft training materials were developed, as the final Phase I task.

A draft DWI detection guide, training booklet, and training video were developed based on the results of the preliminary field study; the materials included 24 driving and 10 post-stop cues. Law enforcement agencies representing 11 of the 15 states with 0.08 BAC limits for DWI were recruited to participate in the Phase II validation study. Participating officers reviewed the video and printed training materials, then completed a data collection form following every enforcement stop made, regardless of the disposition of the stop; the same form was used as in the preliminary field study, conducted previously. The validation study data were analyzed and a final version of the training materials, and this technical report, were prepared as the final Phase II project tasks.

Data were collected during more than 12,000 enforcement stops during this research project. The stops were made by several hundred participating officers, representing more than 50 law enforcement agencies from across the United States.

Results

The results of the preliminary field study largely supported the 20 cues at the 0.08 BAC level that were presented on the original NHTSA DWI detection guide, which was developed in 1980 for the 0.10 BAC level. However, no cues were found that reliably predicted BACs below 0.08; that is, the cues that are key predicotrs of DWI at the 0.08 BAC level failed to emerge with useful probabilities at BAC levels below 0.08. The results of the Phase II validation study further confirmed the key cues that were contained in the original NHTSA guide, a few additional driving cues, and the 10 post-stop cues. The DWI driving cues were presented in functional categories in both the printed materials and the training video: Problems Maintaining Proper Lane Position, Speed and Braking Problems, Vigilance Problems, and Judgment Problems.

Slight modifications were made to the training materials, based on the results of the Phase II validation study. The final version of the DWI detection guide is reproduced below.

DWI DETECTION GUIDE

Weaving plus any other cue: p = at least .65
Any two cues: p = at least .50

PROBLEMS MAINTAINING PROPER LANE POSITION **p=.50-.75**
- Weaving
- Weaving across lane lines
- Straddling a lane line
- Swerving
- Turning with a wide radius
- Drifting
- Almost striking a vehicle or other object

SPEED AND BRAKING PROBLEMS **p=.45-.70**
- Stopping problems (too far, too short, or too jerky)
- Accelerating or decelerating for no apparent reason
- Varying speed
- Slow speed (10+ mph under limit)

VIGILANCE PROBLEMS **p=.55-.65**
- Driving in opposing lanes or wrong way on one-way
- Slow response to traffic signals
- Slow or failure to respond to officer's signals
- Stopping in lane for no apparent reason
- Driving without headlights at night*
- Failure to signal or signal inconsistent with action*

JUDGMENT PROBLEMS **p=.35-.90**
- Following too closely
- Improper or unsafe lane change
- Illegal or improper turn (too fast, jerky, sharp, etc.)
- Driving on other than the designated roadway
- Stopping inappropriately in response to officer
- Inappropriate or unusual behavior (throwing, arguing, etc.)
- Appearing to be impaired

POST STOP CUES **p$\geq$.85**
- Difficulty with motor vehicle controls
- Difficulty exiting the vehicle
- Fumbling with driver's license or registration
- Repeating questions or comments
- Swaying, unsteady, or balance problems
- Leaning on the vehicle or other object
- Slurred speech
- Slow to respond to officer/officer must repeat
- Provides incorrect information, changes answers
- Odor of alcoholic beverage from the driver

*p$\geq$.50 when combined with any other cue:
- Driving without headlights at night
- Failure to signal or signal inconsistent with action

The probability of detecting DWI by random traffic enforcement stops at night has been found to be about three percent (.03).

DWI Cues At BACs Below 0.10
A Review of the Literature

The purpose of this review is to prepare information for the research team concerning the determination and validation of visual cues for the detection of motorists who are driving while impaired (DWI) with blood alcohol concentrations (BACs) below 0.10.

BACKGROUND

An emphasis on DWI enforcement during the past decade has been a factor in the significant improvement in traffic safety, as represented by declining fatal and alcohol-involved crash rates. Despite the significant improvements in traffic safety during the past 30 years, particularly during the past decade, more than 40,000 people still perish each year as a result of motor vehicle crashes. The current US traffic fatality rate amount to a daily average of about 126 people – the equivalent of a Boeing 727 crashing every day of the year.

The economic losses from alcohol involved crashes are staggering at an estimated $21 to $24 billion annually (for property damage alone) (Miller, 1992). In 1990, the combined cost of all traffic collisions was $137.5 billion, including 28 million vehicles damaged, 5.4 million people injured, and 44,531 lives lost (Blincoe & Faigin, 1992).

A reduction in the number of alcohol-involved crashes and the number of alcohol-impaired drivers on the road is a top priority. Numerous studies indicate that when DWI enforcement levels are increased, the number of alcohol involved collisions decrease (Hause, Chavez, Hannon, Matheson, 1977; Voas & Haus, 1987; Blomberg, 1992). However, many officers are unable to identify legally impaired drivers from their driving behavior, or even during the brief interview customary at a sobriety checkpoint. For example, in the Netherlands, as many as 32 percent of drivers with BACs above .05 might escape detection at checkpoint, when officers have the advantage of a face-to-face exchange (Gundy & Verschuur, 1986).

There are at least two clear solutions to the low BAC DWI detection problem: 1) Random Breath Testing (RBT) to objectively detect drivers operating above the legal limit; and, 2) increased officer sensitivity to behavioral cues exhibited at lower BAC levels. Although the RBT method is operating effectively in Australia (McCaul & McLean, 1990), it is probably not an appropriate program for the United States. Fourth Amendment rights currently prevent random breath testing; for example, testing only can occur at a sobriety checkpoint after probably cause has been established (Voas, 1991). Thus, the most likely solution to improving detection of low BACs is to improve the DWI detection ability of law enforcement officers.

In 1980, Harris et al. conducted NHTSA sponsored research to determine the behavioral cues for on-the-road detection of DWI. The final product of this Anacapa Sciences' study was a DWI Detection Guide providing 20 visual cues commonly exhibited by impaired drivers with a BAC equal to or greater than 0.10. The Guide provides the probability for each cue of discriminating between Driving While Impaired (DWI) and Driving While Sober (DWS). The DWI Detection Guide and supporting training materials are part of the DWI Detection and Standardized Field Sobriety Testing course currently distributed by NHTSA (NHTSA, 1990). Surprisingly, although there has been a limited evaluation of the DWI Detection Guide (Vingilis et al., 1983), the only additional research of this type that has been performed since 1980 was a NHTSA sponsored study to develop a motorcycle DWI detection guide (Stuster, 1993).

It is legitimate to question whether a cue guide calibrated for the 0.08 level would appear very similar if not identical to the DWI detection guide developed nearly 20 years ago by Anacapa Sciences. A new, lower BAC limit DWI detection guide might ultimately appear similar to the old guide, but the research is important for at least three reasons.

1. The research that supported the development of the DWI Detection Guide was conducted 18 years ago. Many things have changed considerably since the late 1970s. It is not unreasonable to suspect that some fundamental changes might be reflected in the behavioral cues associated with driver impairment. And, there *might* be behaviors that correlate more closely with lower than higher BACs.

2. At the very least, a periodic reprise of a research and development effort is warranted if the work involved important public policy and enforcement implications. The DWI Detection Guide and training program have not been reviewed or revised since they were developed. Increased awareness of DWI issues and public support for DWI enforcement in recent years contribute to the need to upgrade and make current an important decision aid and training program that is used by law enforcement personnel from across the U.S.

3. It is essential for researchers to view the issue of DWI detection form the perspective of an officer on patrol. A patrol officer wants to know the likelihood that a specific driver behavior is indicative of DWI at the (new) 0.08 level *or above*, or at the 0.04 level *or above*. The "or above" is important because as the BAC level is reduced the probability that a given cue is predictive of DWI rises – because all of the *or aboves* are included in the calculation. From the officer's perspective (in an 0.08 jurisdiction) it is usually irrelevant if the motorist is 0.08, 0.10, or some higher value – it is only important to determine that the motorist is 0.08 *or above*.

Although the modal BAC limit for DWI continues to be 0.10 in the United States, there is a definite trend towards lowering the limit. When the current project started in 1993, only five states had adopted a 0.08 percent legal limit, but by the conclusion of the research the number of states with a 0.08 limit had increased to 15. Further, the Commercial Motor Vehicle Safety Act of 1986 established a nationwide maximum BAC of 0.04 percent for all commercial drivers. In addition, several states have adopted a zero tolerance statute or a 0.02 percent BAC limit for youthful drivers. Studies that suggest low officer DWI detection rates, and improved low BAC detection when using passive alcohol sensors (Kiger et al., 1983; Jones et al., 1985: Vingilis and Gingilis, 1985), suggest the need for a DWI detection guide for levels below 0.10 percent BAC.

RELEVANT RESEARCH

The trend of lowering BAC limits is a reflection of the growing body of evidence that alcohol begins to impair nervous function at BAC levels below 0.10 percent. Moskowitz and Robinson (1988) conducted a comprehensive literature review concerning the effects of alcohol on driving behavior, emphasizing the BACs at which impairment begins. A majority of studies found impairment at low BACs (below 0.07). Many studies found impairment at the 0.04 level and below.

Moskowitz and Robinson computed BACs for all studies, even those that included BAC data in the original report. Often these calculations resulted in higher BACs than were reported in the original study, probably because the older devices were inaccurate. The calculations also allowed for gender differences (by taking into account the different percentages of body water in females and males). If anything, the calculations performed by Moskowitz and Robinson lead to an over-estimation of BAC level. If this is the case, the impairments they report at various BAC levels actually might occur at lower BACs than reported later in this review.

In the Moskowitz study, factors were grouped into behavioral categories pertinent to driving. The following categories were affected at 0.05 percent BAC.

- Reaction time
- Divided attention
- Visual functions
- Tracking
- Information processing
- Perception

Driving behaviors that showed impairment at 0.08 percent to as low as 0.03 percent included:

- Steering
- Braking
- Speed control
- Lane tracking
- Gear changing
- Speed judgment
- Distance judgment

In addition, tasks requiring divided attention showed impairment at BACs as low as 0.02 percent. These driver behaviors are listed in the table presented at the end of this section; the table provides a comprehensive inventory of all DWI cues identified during the current review.

Although the Moskowitz and Robinson review is the most extensive source of information available about driver impairment at various BAC levels, several other studies identify potential cues for DWI detection. In an Anacapa Sciences' study conducted for the Insurance Institute for Highway Safety, Casey and Stuster (1982) identified the following 12 risky driving behaviors of both automobile and motorcycle operators.

- Running stop sign or traffic light
- Unsafe passing due to oncoming traffic
- Unsafe turn in front of oncoming or opposing traffic
- Following too closely
- Unsafe lane change or unsafe merging
- Weaving through traffic
- Crossing a double line in order to pass
- Passing on the right
- Excessive speed for conditions
- Improper turn
- Splitting traffic
- Stunts

Similarly, Treat et al. (1980), in a study of risky driving actions and their involvement in traffic collisions, identified the following 13 Unsafe Driving Actions.

- Pulling out in front of traffic
- Following behavior
- Speeding: Absolute/Over limit
- Speeding: Relative/For traffic conditions
- Turning in front of oncoming traffic
- Running stop sign or light
- Changing lanes or merging in front of traffic
- Driving left of center or on centerline
- Passing unsafely
- Driving off road to right
- Backing unsafely
- Turning too wide or too sharp
- Turning from wrong lane

Several of these unsafe driving actions also have been identified as indicators of driving while impaired in the Harris et al (1980) study: *following too closely, fast speed* (deleted from the final version of the DWI Detection Guide), *failing to respond to traffic signals or signs,* and *driving into opposing or crossing traffic.*

Additionally, several studies suggest stopping method as a primary difference between DWI and unimpaired driving (Attwood et al., 1980; Bragg et al., 1981; Compton, 1985). Differences included *braking sooner* and *stopping jerkily* when under the influence of alcohol.

In a study developing and validating the sobriety field test battery, Tharp, Burns, and Moskowitz (1981) reported the reasons for stopping suspected alcohol impaired drivers. The most common reasons were traffic infractions (e.g., speeding, failing to stop) rather than non-infraction driving behaviors such as weaving or drifting. There is significant overlap between the behaviors reported by Tharp et al. (1981) and the DWI on-the-road detection cues identified by Harris et al. (1980).

In a study evaluating screening procedures for police officers at sobriety checkpoints, cues noticed by officers were correlated with the BAC levels of the drivers. Compton (1985) found significant differences in stopping behavior. In general, drivers stopped smoothly at low BAC levels (0-0.04) and "jerkily" at higher BAC levels (0.10-0.15). Drivers with a low BAC did not serve, those with higher BACs (greater than 0.10) did. Cues identified by Compton that related to driving and stopping behaviors, and personal appearance, are presented in the comprehensive table at the end of this review. The cues identified in the Compton study include personal appearance variables not previously identified in the 1980 Harris et al. study. These cues include:

- Odor of alcohol
- Face flushed
- Speech slurred
- Eyes dilated
- Demeanor
- Hair disheveled
- Poor dexterity
- Clothes disheveled

Of these personal appearance variables, *odor of alcohol, face flushed,* and *eyes dilated* appear to be the most promising for DWI detection at low BAC levels.

CONCLUSIONS

The objective of the current study is to develop an appropriate set of behaviors that can be used by field officers to accurately identify motorists who are driving while impaired at the 0.08 level, and to determine if cues are available that predict 0.04 and 0.02 BAC levels. No sources were identified that specifically identify behavioral cues for alcohol impairment at the lower levels. However, a table of potentially applicable behaviors has been prepared, based on a comprehensive review of the literature. This list, presented in the following table, includes all behaviors previously discussed in this review, and shows the considerable agreement among the studies. The behaviors identified here later will be combined with cues identified during interviews with DWI patrol experts, and from the archival research. The resulting comprehensive inventory of DWI cues then will be used to develop data collection forms for the first of the field studies.

SESSION VI

PHASE TWO: PERSONAL CONTACT

SESSION VI

PHASE TWO: PERSONAL CONTACT

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

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

CONTENT SEGMENTS

A. Overview: Tasks and Decision

B. Typical Investigation Clues of the Driver Interview

C. Recognition and Description of Investigation Clues

D. Interview/Questions Techniques

E. Recognition and Description of Clues Associated With the Exit Sequence

LEARNING ACTIVITIES

- o Instructor-Led Presentations
- o Video Presentation
- o Instructor-Led Demonstrations
- o Participant's Presentations

PERSONAL CONTACT

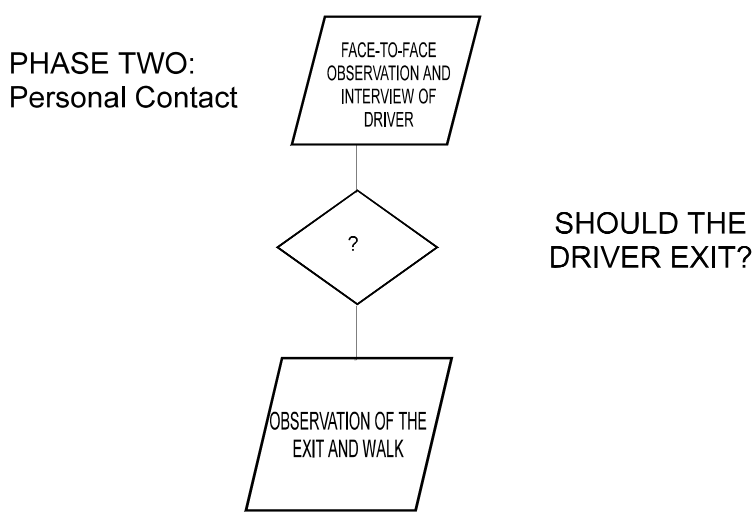
OVERVIEW

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 a crash.

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 impaired 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 equipment/registration violation, or where no unusual driving was evident. In some cases, Phase One will have been absent. For example, you may first encounter the driver and vehicle after a crash 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 <u>definite</u> indications that the driver is impaired.

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

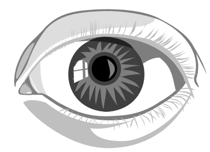
Face-to-face observation and interview of the driver allows you to use three senses to gather evidence of alcohol and/or other drug influence:

- o the sense of sight;
- o the sense of hearing; and
- o 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 and/or other drug influence. Among them are:

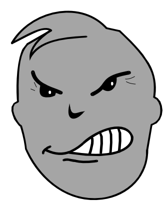
- o bloodshot eyes;
- o soiled clothing;
- o fumbling fingers;
- o alcohol containers;
- o drugs or drug paraphernalia;
- o bruises, bumps or scratches;
- o unusual actions.



HEARING

Among the things you might <u>hear</u> during the interview that would be describable clues or evidence of alcohol and/or other 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 <u>smell</u> during the interview that would be describable clues or evidence of alcohol and/or other 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 and/or other 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 and/or other 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.

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 DO 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:

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

An example of the first technique, <u>asking for two things simultaneously</u>, 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:

- o forgets to produce <u>both</u> documents;
- o produces documents other than the ones requested;
- o fails to see the license, registration or both while searching through wallet or purse;
- o fumbles or drops wallet, purse, license or registration;
- o 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, what time is it right now?" Possible evidence of impairment may be disclosed by the interrupting or distracting question. Be alert for the driver who:

- ignores the question and concentrates only on the license or registration search;
- forgets to resume the search after answering the question;
- 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

Know if there are any judicial restraints in reference to these tests.

ALPHABET

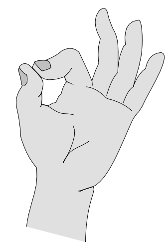
This technique requires the subject to recite a part of the alphabet. You instruct the subject to recite the alphabet beginning with a letter other than A and stopping at a letter other than Z. For example, you might say to a driver, "Recite the alphabet, beginning with the letter E as in Edward and 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 after you have developed a suspicion that the driver is impaired.* 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:

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

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

---

*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.

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 Phase II interview are these three:

   a.

   b.

   c.

5. Among the describable clues an officer might smell during the Phase II 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

   ____

   ____

ATTACHMENT(S)

DWI INVESTIGATION FIELD NOTES

I. 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__________ CRASH 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 ____

____

GENERAL OBSERVATIONS

SPEECH ____

ATTITUDE ____

CLOTHING ____

PHYSICAL DEFECTS / DRUGS OR MEDICATIONS USED______________________________

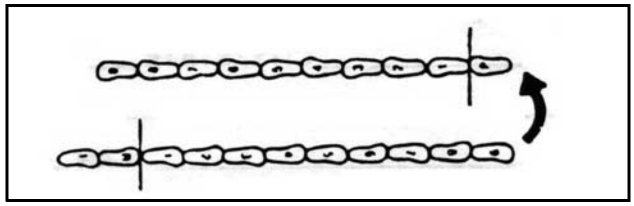
IV. PRE-ARREST SCREENING

HORIZONTAL GAZE NYSTAGMUS

				LEFT	RIGHT
Equal Pupils	☐ Yes ☐ No	✪	LACK OF SMOOTH PURSUIT		
Equal Tracking	☐ Yes ☐ No	✪	DISTINCT AND SUSTAINED NYSTAGMUS AT MAXIMUM DEVIATION		
Vertical Nystagmus	☐ Yes ☐ No	✪	ONSET OF NYSTAGMUS PRIOR TO 45 DEGREES		

Other (i.e., Resting Nystagmus)____

WALK AND TURN



INSTRUCTIONS STAGE

CANNOT KEEP BALANCE	
STARTS TOO SOON	

WALKING STAGE

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

IMPROPER TURN (Describe) ______________________________

CANNOT DO TEST (EXPLAIN) ______________________________

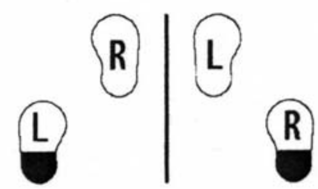
____

OTHER: ______________________________

____

ONE LEG STAND

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



Type of Footwear

CANNOT DO TEST (EXPLAIN) ______________________________

____

OTHER: ______________________________

____

OTHER FIELD SOBRIETY TESTS

NAME OF TEST ______________________________

DESCRIBE PERFORMANCE______________________________

____

NAME OF TEST ______________________________

DESCRIBE PERFORMANCE______________________________

____

NAME OF TEST ______________________________

DESCRIBE PERFORMANCE______________________________

____

PBT (1) (optional) Time:__________ Results:__________	PBT (2) (optional) Time:__________ Results:__________

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:

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

<u>CONTENT SEGMENTS</u>

A. Overview: Tasks and Decision

B. Gaze Nystagmus - Definition

C. Horizontal Gaze Nystagmus - Definition, Concepts, Demonstrations

D. Vertical Gaze Nystagmus - Definition, Concepts, Demonstrations

E. Divided Attention Tests: Concepts, Examples, Demonstrations

F. Advantages and Limitations of Preliminary Breath Testing

G. The Arrest Decision

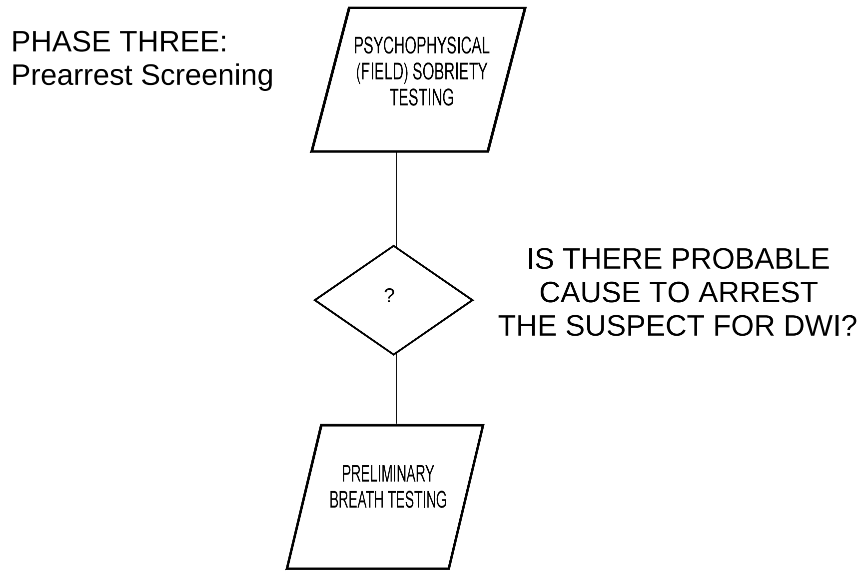
<u>LEARNING ACTIVITIES</u>

- o Instructor-Led Presentations
- o Instructor-Led Demonstrations
- o Video Presentation

PRE-ARREST SCREENING

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 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 impaired. 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 <u>all</u> 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.

NYSTAGMUS

"Nystagmus" means an involuntary jerking of the eyes.

HORIZONTAL GAZE NYSTAGMUS

Horizontal Gaze Nystagmus (HGN) refers to an involuntary jerking occurring as the eyes gaze toward the side. In addition to being involuntary the person experiencing the nystagmus is unaware that the jerking is happening.

Involuntary jerking of the eyes becomes readily noticeable when a person is impaired. 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 identify suspects who are impaired.

In administering the HGN test, the officer has the suspect follow the motion of a small stimulus with the eyes only. The stimulus may be the tip of a pen or penlight, an eraser on a pencil or your finger tip, whichever contrasts with the background.

When the HGN test is administered always begin 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 impaired by 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 and sustained nystagmus at maximum deviation is another clue of impairment.)

- as the eye moves toward the side, does it start to jerk prior to a 45-degree angle? (Onset of nystagmus prior to 45-degrees is another clue of impairment.)

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. The original research shows that if four or more clues are evident, it is likely that the suspect's blood alcohol concentration is above 0.10. With four-or-more clues present, this test is 77% accurate.

VERTICAL GAZE NYSTAGMUS

Vertical Gaze Nystagmus is an involuntary jerking of the eyes (up and down) which occurs when the eyes gaze upward at maximum elevation. Although this type of nystagmus was not addressed in the original research, field experience has indicated that the presence of Vertical Gaze Nystagmus has proven to be a reliable indicator of high doses of alcohol for that individual or certain other drugs.

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 reduce a person's ability to divide attention. Impaired drivers often 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 impaired, 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 impaired 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;
- judgment and decision making;
- balance;
- steady, sure reactions;
- clear vision;
- small muscle control;
- 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 with their feet in heel-to-toe position, keep their arms at their sides, and listen to the instructions. The Instructions Stage divides the subject's attention between a balancing task (standing while maintaining the heel-to-toe position) and an information processing task (listening to and remembering instructions).

In the Walking Stage the subject takes nine heel-to-toe steps, turn in a prescribed manner, and take nine heel-to-toe steps back, while counting the steps out loud, while watching their feet. During the turn, the subject keeps their front foot on the line, turn in a prescribed manner, and use the other foot 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); 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 and interpreted in a standardized manner, i.e., the same way every time. Officers administering the Walk-and-Turn test 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.

Inability to complete the Walk-and-Turn 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.

Original research shows that if a suspect exhibits <u>two or more</u> 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 accurate 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 Balance and Counting Stage.

In the <u>Instruction Stage</u>, 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 <u>Balance and Counting Stage</u>, the subject must raise one leg, either leg, with the foot approximately six inches off the ground, keeping raised foot parallel to the ground. While looking at the elevated foot, count out loud in the following manner: "one thousand and one", "one thousand and two", “one thousand and three” until told to stop. This divides the subject's attention between balancing (standing on one foot) and small muscle control (counting out loud).

<u>The timing for a thirty-second period by the officer is an important part of the One-Leg Stand test</u>. The original research has shown that many impaired subjects are able to stand on one leg for up to 25 seconds, but that few can do so for 30 seconds.

One-Leg Stand is also administered and interpreted in a standardized manner. 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.

Inability to complete the One-Leg Stand test occurs when the suspect:

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

The original 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 accurate 65 percent of the time.

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. The PBT result is an important factor because it provides direct indication of alcohol impairment. All other evidence, from initial observation of the vehicle in operation through formal psychophysical testing, indicates alcohol impairment.

ADVANTAGES OF PBT

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

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

- o 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. 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.

  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.

Radio frequency interference (RFI) can produce either high or low test results, or can prevent a breath test device from producing any result. Care should be exercised when utilizing a PBT around radio equipment

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 arrest the suspect for DWI. Under no circumstances should you charge the suspect with a lesser offense <u>instead</u> 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 participant will be able to:

- o Discuss the development and validity of the research and the standardized elements, clues and interpretation of the three standardized field sobriety tests.
- o Discuss the different types of nystagmus and their effects on the Horizontal Gaze Nystagmus test.
- o Discuss and properly administer the three Standardized Field Sobriety Tests.
- o Discuss and recognize the clues of the three Standardized Field Sobriety Tests.
- o 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.
- o Discuss the limiting factors of the three Standardized Field Sobriety Tests.

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

OVERVIEW OF SFST
RESEARCH AND DEVELOPMENT

1. For many years law enforcement officers have utilized field sobriety tests to determine the impairment of a person's driving due to alcohol influence. The performance of the person on those field sobriety tests was used by the officer to develop probable cause for arrest and as evidence in court. A wide variety of field sobriety tests existed and there was a need to develop a battery of standardized valid tests.

2. Beginning in late 1975, extensive scientific research studies were sponsored by NHTSA through a contract with the Southern California Research Institute (SCRI) to determine roadside field sobriety tests were the most accurate. SCRI published the following three reports:

   - California: 1977 (Lab)
   - California: 1981 (Lab and Field)
   - Maryland, D.C., V.A., N.C., 1983 (Field)

3. SCRI traveled to law enforcement agencies throughout the United States to select the most commonly used field sobriety tests. Six tests were used in the initial stages of this study.

4. Laboratory research indicated that three of these tests, when administered in a standardized manner, were a highly accurate and reliable battery of tests for distinguishing BACs above 0.10:

   - Horizontal Gaze Nystagmus (HGN)
   - Walk-and-Turn (WAT)
   - One-Leg Stand (OLS)

5. NHTSA analyzed the laboratory test data and found:

   - HGN, by itself, was 77% accurate
   - WAT, by itself, was 68% accurate
   - OLS, by itself, was 65% accurate
   - By combining HGN and WAT an 80% accuracy can be achieved.

6. The final phase of this study was conducted as a field validation.

   - Standardized, practical and effective procedures were developed
   - The tests were determined to discriminate in the field, as well as in the laboratory.

7. The three standardized test were found to be highly reliable in identifying subjects whose BACs were above 0.10. The results of the study unmistakably validated the SFSTs.

SFST VALIDATION STUDIES

1. Three SFST validation studies were undertaken between 1995 and 1998:

    o Colorado - 1995
    o Florida - 1997
    o San Diego - 1998

2. The Colorado SFST validation study was the first full field study that utilized law enforcement personnel experienced in the use of SFSTs.

    o The initial study utilized only a few experienced officers in DWI enforcement in both a laboratory setting and field setting.

    o Correct arrests decisions were made 93% of the time based on the 3-test battery (HGN, WAT, OLS). Substantially higher than the initial study results.

3. The Florida SFST field validation study was undertaken in order to answer the question of whether SFSTs are valid and reliable indices of the presence of alcohol when used under present day traffic and law enforcement conditions.

    o Correct decisions to arrest were made 95% of the time based on the 3-test battery (HGN, WAT, OLS).

    o This is the third SFST field validation study that has been undertaken. Each has shown that the SFST 3-test battery is the only scientifically validated and reliable method for discriminating between impaired and unimpaired drivers.

4. The San Diego SFST validation field study was undertaken because of the nationwide trend towards lower the BAC limits to 0.08. The question to be answered was “does SFST discriminate at BAC’s below 0.10".

    o Correct arrest decisions were made 91% of the time based on the 3-test battery (HGN, WAT, OLS) at the 0.08 level and above.

- o The results of this study provide a clear evidence of the validity of the 3-test battery. To support arrest decisions at above or below 0.08, it strongly suggests that the SFSTs also accurately discriminate BACs at 0.04 and above.

OVERVIEW OF NYSTAGMUS

Nystagmus

Nystagmus is defined as an involuntary jerking of the eyes. Alcohol and certain other drugs cause Horizontal Gaze Nytagmus.

Categories of Nystagmus

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:

    - o 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.

    - o 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.

    - o 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.

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 strobe lights, rotating lights, or rapidly moving traffic in close proximity. The Horizontal Gaze Nystagmus test will not be influenced by optokinetic nystagmus when 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 accurate test in the Standardized Field Sobriety Test battery. Although this type of nystagmus is most accurate for determining alcohol impairment, its presence may also indicate use of certain other drugs.

  (2) Vertical Gaze Nystagmus is an involuntary jerking of the eyes (up and down) which occurs when the eyes gaze upward at maximum elevation. The presence of this type of nystagmus is associated with high doses of alcohol for that individual and certain other drugs. The drugs that cause Vertical Gaze Nystagmus are the same ones that cause Horizontal Gaze Nystagmus.

  Note: There is no drug that will cause Vertical Gaze Nystagmus that does not cause Horizontal Gaze Nystagmus. If Vertical Gaze Nystagmus is present and Horizontal Gaze Nystagmus is not, it could be a medical condition.

  (3) Resting Nystagmus is referred to as a jerking of the eyes as they look straight ahead. Its presence usually indicates a pathology or high doses of a Dissociative Anesthetic drug such as 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.

Medical Impairment

The examinations that you can conduct to assess possible medical impairment include:

- o Pupil size
- o Resting Nystagmus
- o Tracking ability

PROCEDURES

Procedures to Assess Possible Medical Impairment

Prior to administration of HGN, the eyes are checked for equal pupil size, resting nystagmus, and equal tracking (can they follow an object together). 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.

Procedures of Horizontal Gaze Nystagmus Testing: The Three Clues

The test you will use at roadside is "Horizontal Gaze Nystagmus" -- an involuntary jerking of the eyes occurring as the eyes gaze toward the side. Some jerking will be seen if the eyes are moved far enough to the side.

1. The Lack of Smooth Pursuit (Clue Number One) - The eyes can be observed to jerk or "bounce" as they follow a smoothly moving stimulus, such as a pencil or penlight. The eyes of an unimpaired person will follow smoothly, i.e., a marble rolling across a smooth pane of glass, or windshield wipers moving across a wet windshield.

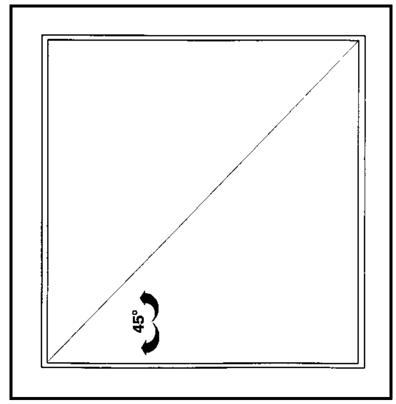
2. Distinct and Sustained Nystagmus At Maximum Deviation (Clue Number Two) - Distinct and sustained nystagmus will be evident when the eye is held at maximum deviation for a minimum of four seconds. People exhibit slight jerking of the eye at maximum deviation, even when unimpaired, but this will not be evident or sustained for more than a few seconds. When impaired by alcohol, the jerking will be larger, more pronounced, sustained for more than four seconds, and easily observable.

3. Onset of Nystagmus Prior To 45 Degrees (Clue Number Three) - The point at which the eye is first seen jerking. If the jerking begins prior to 45 degrees it is evident that the person has a BAC above 0.08, as shown by recent research.

   The higher the degree of impairment, the sooner the nystagmus will be observable.

Estimating a 45-Degree Angle

It is important to know how to estimate a 45-degree angle. How far you position the stimulus from the suspect's nose is a critical factor in estimating a 45-degree angle. (i.e., If the stimulus is held 12" in front of the suspect's nose, it should be moved 12" to the side to reach 45 degrees. Likewise, if the stimulus is held 15" in front of the suspect's nose, it should be moved 15" to the side to reach 45 degrees.)



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

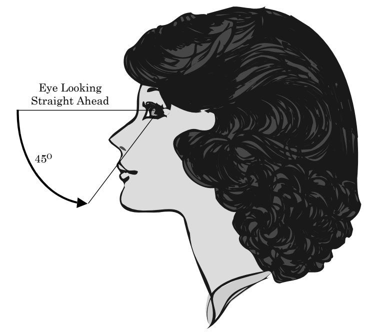
If the suspect is wearing eyeglasses, have them removed.

Give the suspect the following instructions from a safe position. (**FOR OFFICER SAFETY KEEP YOUR WEAPON AWAY FROM THE SUSPECT**):

o "I am going to check your eyes."
o "Keep your head still and follow this stimulus with your eyes only."
o "Keep following the stimulus with your eyes until I tell you to stop."

Position the stimulus approximately 12-15 inches from the suspect's nose and slightly above eye level. Check to see that both pupils are equal in size. If they are not, this may indicate a head injury. You may observe Resting Nystagmus at this time, then 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.

Check the suspect's left eye by moving the stimulus to your right. Move the stimulus smoothly, at a speed that requires approximately 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 able to pursue smoothly. 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 distinct and sustained nystagmus at maximum deviation 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 a minimum of four seconds, and observe the eye for distinct and sustained nystagmus. Move the stimulus all the way across the suspect's face to check the right eye holding that position for a minimum of four seconds. Repeat the procedure.

Note: Fatigue Nystagmus. This type of nystagmus may begin if a subject's eyes are held at maximum deviation for more than 30 seconds.

Next, 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 approximately 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 approximately 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. CHECK FOR EYEGLASSES
2. VERBAL INSTRUCTIONS
3. POSITION STIMULUS (12-15 INCHES)
4. EQUAL PUPIL SIZE AND RESTING NYSTAGMUS
5. TRACKING
6. LACK OF SMOOTH PURSUIT
7. DIST. & SUSTAINED NYSTAGMUS @ MAX. DEV.
8. ONSET OF NYSTAGMUS PRIOR TO 45°
9. TOTAL THE CLUES
10. CHECK FOR VERTICAL GAZE NYSTAGMUS

NOTE: Nystagmus may be due to causes other than alcohol. These other causes include seizure medications and some other drugs. 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 and sustained when the eye is held at maximum deviation for a minimum of four seconds.
3. The angle of onset of nystagmus is prior to 45 degrees.

Based on the original research, 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 about 77% of your suspects accurately. This 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 Gaze Nystagmus

The Vertical Gaze Nystagmus test is simple to administer. During the Vertical Gaze Nystagmus test, look for jerking as the eyes move up and are held for approximately four seconds at maximum elevation.

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 a contrasting stimulus for the suspect to follow with their eyes. This can be 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 approximately 12-15 inches in front of the nose. 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

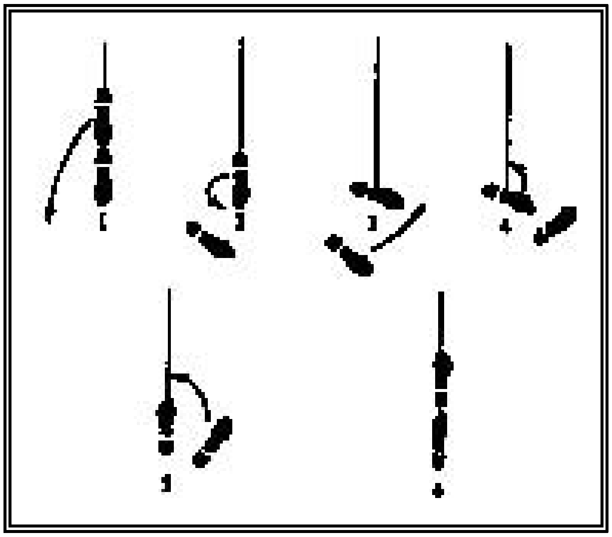
   For standardization in the performance of this test, have the suspect assume the heel-to-toe stance by giving the following verbal instructions, accompanied by demonstrations:

   - "Place your left foot on the line" (real or imaginary). 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 sides." Demonstrate.
   - "Maintain this position until I have completed the instructions. Do not start to walk until told 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, turn, and take nine heel-to-toe steps back." (Demonstrate 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. Original research demonstrated that the behaviors listed below are 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 impaired 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. The suspect pauses for several seconds. 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 more than one-half inch 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. Also record this clue if the suspect has not followed directions as demonstrated, i.e., spins or pivots around.

H. Incorrect number of steps. Record this clue if the suspect takes more or fewer than nine steps in either direction.

Note: If suspect can't do the test, record observed clues and document the reason for not completing the test, e.g. suspect's safety.

If the suspect has difficulty with the test (for example, steps off the line), continue from that point, not from the beginning. This test may lose its sensitivity if it is repeated several times.

Observe the suspect from a safe distance and limit your movement which may distract the suspect during the test. **Always consider officer safety.**

Based on original research, if the suspect exhibits two or more 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 accurately classify 68% of your suspects.

4. Test Conditions

Walk-and-Turn test requires a designated straight line, and should be conducted on a reasonably dry, hard, level, nonslippery surface. There should be sufficient room for suspects to complete nine heel-to-toe steps. Note: Recent field validation studies have indicated that varying environmental conditions have not affected a suspect's ability to perform this test.

The original research indicated that individuals over 65 years of age, back, leg or inner ear problems had difficulty performing this test. Individuals wearing heels more than 2 inches high should be given the opportunity to remove their shoes.

5. Combined Interpretation of Horizontal Gaze Nystagmus and Walk-and-Turn Tests

Based on the original research, combining four or more clues of HGN and two or more clues of the Walk-and-Turn, suspects can be classified as above 0.10 BAC 80% of the time.

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)

   - "Do not start to perform the test 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 Balance and Counting Stage

   Explain the test requirements, using the following verbal instructions, accompanied by demonstrations:

   - "When I tell you to start, raise one leg, either leg, with the foot approximately six inches off the ground, keeping your raised foot parallel to the ground." (Demonstrate one leg stance.)

   - "You must keep both legs straight, arms at your side."

   - "While holding that position, count out loud in the following manner: "one thousand and one, one thousand and two, one thousand and three, until told to stop." (Demonstrate a count, as follows: "one thousand and one, one thousand and two, one thousand and three, etc." Officer should not look at his foot when conducting the demonstration - OFFICER SAFETY.)

   - "Keep your arms at your sides at all times and keep watching the raised foot."

   - "Do you understand?" (Make sure suspect indicates understanding.)

   - "Go ahead and perform the test." (Officer should always time the 30 seconds. Test should be discontinued after 30 seconds.)

   Observe the suspect from a safe distance. 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.

3. Test Interpretation

You may observe a number of different behaviors when a suspect performs this test. The original research found 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 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 can't do the test, record observed clues and document the reason for not completing the test, e.g. suspect's safety.

Remember that time is critical in this test. The original research has shown a person with a BAC above 0.10 can maintain balance for up to 25 seconds, but seldom as long as 30.

Based on original research, 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 accurately classify 65% of the people you test as to whether their BAC's are above 0.10.

Observe the suspect from a safe distance 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.

4. Test Conditions

One-Leg Stand requires a reasonably dry, hard, level, and non-slippery surface. Suspect's safety should be considered at all times.

The original research indicated that certain individuals over 65 years of age, back, leg or inner ear problems, or people who are overweight by 50 or more pounds had difficulty performing this test. Individuals wearing heels more than 2 inches high should be given the opportunity to remove their shoes.

5. Taking Field Notes on Suspects' Performance of Field Sobriety Tests

For purposes of the arrest report and courtroom testimony, it is 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, 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 The Eye Procedures

First, have subject remove glasses.

Equal Pupils	☐ Yes	☐ No
Equal Tracking	☐ Yes	☐ No
Vertical Nystagmus	☐ Yes	☐ No
Other (i.e., Resting Nystagmus) ________		

The section for Medical Assessment appears at the bottom of the guide's front page.

- o Check "Yes" or "No" box for equal pupil size.
- o Check "Yes" or "No" box for equal tracking.

In the section labeled "other", record any facts, circumstances, conditions, or observations that may be relevant to this procedures (i.e., Resting Nystagmus).

HORIZONTAL GAZE NYSTAGMUS

	LEFT	RIGHT
✪ LACK OF SMOOTH PURSUIT		
✪ DISTINCT AND SUSTAINED NYSTAGMUS AT MAXIMUM DEVIATION		
✪ ONSET OF NYSTAGMUS PRIOR TO 45 DEGREES		

The section on the Horizontal Gaze Nystagmus test appears on the bottom of the guide's front side.

Complete the entire test for both eyes, writing "yes" or "no" for each nystagmus clue.

- o Write "yes" if the clue is present;
- o 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 impairment emerging during nystagmus test:

  - suspect unable to keep head still;
  - suspect swaying noticeably;
  - suspect utters incriminating statements.

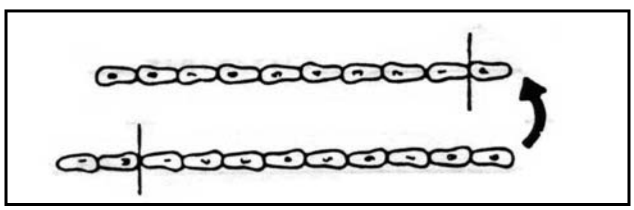
- o Examples of conditions that may interfere with suspect's performance of the Horizontal Gaze Nystagmus test:

  - wind, dust, etc. irritating suspect's eyes;
  - visual or other distractions impeding the test (always face suspect away from rotating lights, strobe lights and traffic passing in close proximity).

7. <u>Taking Field Notes on Walk-and-Turn Testing</u>

The section on the Walk-and-Turn test appears at the top of the guide's back side.

<u>WALK AND TURN</u>



CANNOT KEEP BALANCE ☐

STARTS TOO SOON ☐

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

IMPROPER TURN (Describe)

CANNOT DO TEST (EXPLAIN)

OTHER:

The first two clues, "cannot keep balance" and "starts too soon" apply only during the instructions stage of the test. Record the <u>number of times</u> 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.

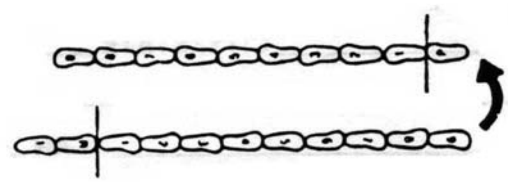
Record the next five clues <u>separately</u> for the walk <u>down</u> the line, and then up the line.

A. If a suspect <u>stops walking</u>, record it by drawing 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 bottom of the vertical line to indicate stops walking.

<u>WALK AND TURN</u>

CANNOT KEEP BALANCE ☐

STARTS TOO SOON ☐



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

IMPROPER TURN (Describe)

CANNOT DO TEST (EXPLAIN)

OTHER:

B. If suspect <u>fails to touch heel-to-toe</u>, 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 <u>steps off the line</u> while walking, record it by drawing a line from the appropriate foot print at an angle in the direction in which the foot stepped. Do it for each nine steps.

D. If suspect <u>uses arms to balance</u>, give some indication of how often or how long this happens.

   - <u>Example</u>: suspect raised arms from sides three times; place a check for each occurrence in appropriate box.

   - <u>Example</u>: suspect held arms away from sides during 3 through 7; place a check for each occurrence in appropriate box.

   - <u>Example</u>: suspect "flapped" arms continuously; make a note.

E. Record the <u>actual number of steps</u> taken by suspect in each direction.

   For the next point, "improper turn," record a <u>description</u> of the turn.

   If you note that the suspect <u>"cannot perform test,"</u> indicate explicitly why you did so.

   - <u>Example</u>: "off line three times;"
   - <u>Example</u>: "staggered six steps to right, nearly fell;"
   - <u>Example</u>: "fear of injury."

   At end of the test, examine each factor and determine how many clues have been recorded. <u>Remember, each clue may appear several times, but still only constitutes one clue</u>.

   In the section labeled "other," record any facts, circumstances, conditions or observations that may be relevant to this test.

   - Examples of additional evidence of impairment during Walk-and-Turn test:

     - suspect verbally miscounts steps;
     - suspect utters incriminating statements.

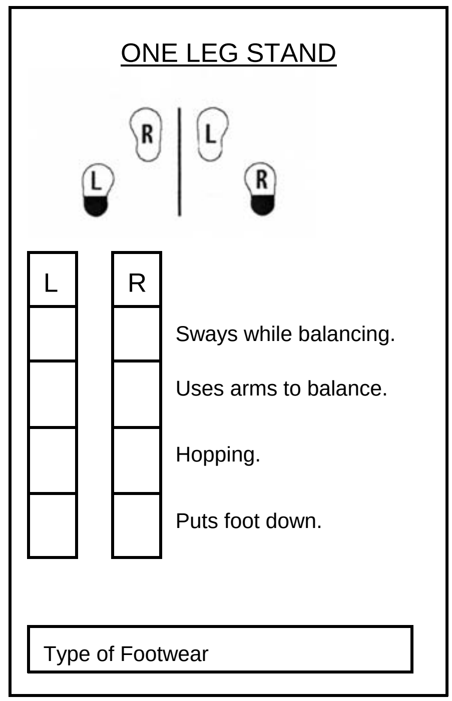
- o Examples of conditions that may interfere with suspect's performance of the Walk-and-Turn test:

  - wind/weather conditions;
  - suspect's age, weight;
  - suspect's footwear.

8. <u>Taking Field Notes on the Combined Interpretation of Nystagmus and Walk-and-Turn</u>

By combining four or more clues of HGN with two or more clues of the WAT test, suspects can be correctly classified as above 0.10 BAC 80% of the time.

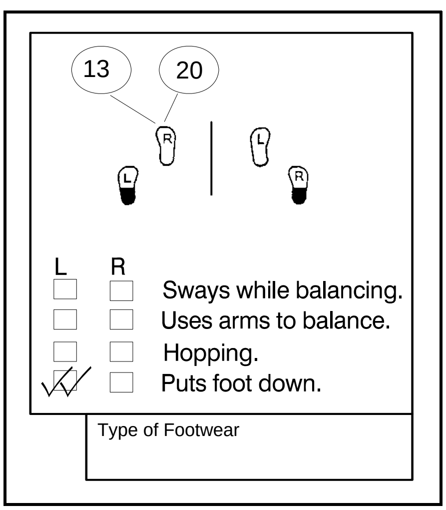
9. <u>Taking Field Notes on One-Leg Stand Testing</u>



The section on the One-Leg Stand test appears midway down the page.

By recording <u>when</u> 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 left. 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.

IT IS NECESSARY TO EMPHASIZE THIS VALIDATION APPLIES ONLY WHEN:

- **THE TESTS ARE ADMINISTERED IN THE PRESCRIBED, STANDARDIZED MANNER**
- **THE STANDARDIZED CLUES ARE USED TO ASSESS THE SUSPECT'S PERFORMANCE**
- **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.

At end of the test, examine each factor and determine how many clues have been recorded. Remember, each clue may appear several times, but still only constitutes one clue.

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 real or imaginary line and ____________________
____

3. During the ___________ stage of the Walk-and-Turn, the suspect is required to count out loud.

4. Per the original research, 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. Per original research, 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 _________ clue(s).

11. In the One-Leg Stand test, a suspect who raises arms, hops, and puts foot down has exhibited ___________ clue(s).

12. The maximum number of clues for Horizontal Gaze Nystagmus that can appear in <u>one</u> eye is ___________.

13. Per original research, the HGN test can determine whether a suspect's BAC is above 0.10, ___________ percent of the time.

14. The <u>third clue</u> of HGN is an onset of nystagmus prior to _______ degrees.

ATTACHMENT(S)

ATTACHMENT A

SCIENTIFIC PUBLICATIONS AND RESEARCH REPORTS ADDRESSING NYSTAGMUS

1. 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.

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

4. 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).

5. 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).

6. 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).

7. 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).

8. 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).

9. 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).

10. 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).

11. 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).

12. 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).

13. 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).

14. 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).

15. 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).

16. Umeda & Sakata, <u>Alcohol and the Oculomotor System</u>, 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).

17. Baloh, Sharma, Moskowitz & Griffith, <u>Effect of Alcohol and Marijuana on Eye Movements</u>, 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).

18. Savolainen, Riihimaki, Vaheri & Linnoila, <u>Effects of Xylene and Alcohol on Vestibular and Visual Functions in Man</u>, 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. Tharp, Burns & Moskowitz, <u>Circadian Effects on Alcohol Gaze Nystagmus</u> (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).

20. Tharp, Burns & Moskowitz, <u>Development and Field Test of Psychophysical Tests for DWI Arrests</u>, 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).

21. Church & Williams, <u>Dose- and Time-Dependent Effects of Ethanol</u>, 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).

22. Anderson, Schweitz & Snyder, <u>Field Evaluation of Behavioral Test Battery for DWI</u>, 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).

23. 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").

24. 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.).

25. 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).

26. 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).

27. 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).

28. 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).

29. 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.).

30. Burns & Anderson, Field Evaluation Study of the Standardized Field Sobriety Test (SFST) Battery, (Colorado, 1995). Study examined the accuracy of police arrest and release decisions under roadside conditions where trained and experienced officers rely on the SFSTs. Breath and blood tests supported 94% of the decisions to arrest. PBT measurements indicated 64% correct release decisions.

31. Burns & Dioquino, Field Evaluation Study of the Standardized Field Sobriety Test (SFST) Battery, (Florida, 1997). Study demonstrated that officers trained under NHTSA guidelines and experienced in application of the SFST battery in the field were accurate in 95% of arrest decisions and 85% of release decisions.

32. Stuster & Burns, Validation of the Standardized Field Sobriety Test Battery at BACs Below 0.10 Percent, U.S. Dept. of Transportation Rep. No. DOT-HS-808-839 (1998). Study found NHTSA's Standardized Field Sobriety test battery to be an accurate method of discriminating motorist's BACs above and below 0.08 percent, and above and below 0.04 percent when testing is conducted by officers trained in modified scoring of NHTSA's SFST battery. (See bar graph on next page.)

33. Citek, Ball, & Rutledge, Nystagmus Testing in Intoxicated Individuals, College of Optometry, Pacific University, Forest Grove, Oregon and the Oregon State Police, Wilsonville, Oregon (2003). The HGN test administered in the standing, seated, and supine postures is able to discriminate impairment at criterion BACs of 0.08% and 0.10%. The VGN test can identify high levels of impairment at any test posture. Therefore, these tests can be used by an officer to determine if a driver is impaired, regardless of whether the driver is standing, seated, or supine.

34. Burns, The Robustness of the Horizontal Gaze Nystagmus (HGN) Test, U.S. Department of Transportation Rep. (2004). The data provide no reason to expect HGN examinations of one-eyed individuals to yield misleading information and HGN, as used by law enforcement is a robust procedure, and the data obtained in this experiment do not support recommendations for changes in how officers are trained to view a suspect's eyes and interpret their observations. The study findings provide no basis for concluding that the validity of HGN is compromised by minor procedural variations.

ATTACHMENT B

A Colorado Validation Study

of the

Standardized Field Sobriety Test (SFST) Battery

Final Report Submitted to
Colorado Department of Transportation
November 1995

Marcelline Burns, Ph.D.
Southern California Research Institute
Los Angeles, California

Ellen W. Anderson, Deputy
Pitkin County Sheriff's Office
Aspen, Colorado

This report was funded by the Office of Transportation Safety, Colorado Department of Transportation
(utilizing National Highway Traffic Safety Administration funds, under Project Number 95-408-17-05).

I. Introduction

A battery of standardized field sobriety tests (SFSTs), which was developed under National Highway Traffic Safety (NHTSA) funding during the 1970's, is now used by police officers nationwide. Traffic officers in fifty states, who have been trained in standardized administration of the tests, routinely use them and incorporate their observations of drivers' test performance into their arrest or release decisions. Defense attorneys, however, often challenge the admissibility of court testimony about the test battery.

Roadside decisions are a critical components of alcohol-and-driving enforcement, and, therefore, of traffic safety. Because the SFSTs aid officers in the often-difficult task of identifying alcohol-impaired drivers, it is likely that the tests have contributed in some unknown measure to the significant decline in alcohol-related fatalities over the last decade. Given that they have exerted a positive impact on traffic safety, it is important to resolve questions about their validity and reliability, to maintain their credibility, and to preserve them as a roadside tool.

Because court arguments about SFSTs focus largely on the research conducted at the Southern California Research Institute (SCRI) and because that research is sometimes misrepresented or misunderstood, it is necessary first to clarify its purpose. Two large-scale laboratory experiments were conducted for the purpose of identifying and standardizing a "best" set of tests (Burns and Moskowitz, 1977; Tharp, burns and Moskowitz, 1981). Although it clearly is relevant at this point in time to inquire whether the methods of those experiments were scientifically sound, it should be recognized that the laboratory data are now only indirectly enlightening about current roadside use of the tests. In particular, note that controlled laboratory conditions are less variable and, therefore, may be less challenging than the highly varied conditions which officers routinely encounter in the field.

Also, officer experience with the SFSTs is key to the skill and confidence with which they use them as a basis for their decisions. Thus it is important to understand that the officers who participated in the SCRI studies had not been trained with the SFSTs until just prior to the experiments. They had not had opportunity and time to gain skill or to develop confidence in the tests. In contrast, many of the officers who now use and testify about the tests have been using them regularly for ten or more years, and it is reasonable to assume they have gained skill and to expect that their decisions based on the tests may be more accurate than those of the officers during the initial research.

The question to be addressed in 1995 by agencies, officers and the courts is, "How accurate are the arrest decisions which are made by experienced, skilled officers under roadside conditions when they rely on SFSTs?". A broadly applicable answer cannot be found in laboratory research. It requires field data; i.e., information about real-world arrest decisions by officers trained by NHTSA guidelines to administer the SFSTs.

The Colorado Department of Transportation funded a 1995 study to obtain such data. Through a grant to the Pitkin County Sheriff's Office and with the cooperative effort of seven Colorado law enforcement agencies, records were collected from drivers tested with the SFSTs at roadside. The seven agencies were:

Aspen Police Department (APD)
Basalt Police Department (BPD)
Boulder County Sheriff's Office (BCSO)
Colorado State Patrol (CSP)
Lakewood Police Department (LPD)
Pitkin County Sheriff's Office (PCSO)
Snowmass Village Police Dept (SVPD)

With information drawn from impaired-driving records, a data base was created and analyzed at the Souther California Research Institute.

Technical Summary

In the State of Colorado, motor vehicle operators are subject to arrest if they are found to be driving with a blood alcohol concentration (BAC) of 0.05% or higher. At BACs of 0.05% or higher but less than 0.10%, they are charged with Driving While Ability Impaired (DWAI). At BACs of 0.10% and higher, the charge is Driving Under the Influence (DUI). These statutes reflect the evidence from both epidemiological and laboratory studies of alcohol impairment of driving skills.

It is the responsibility of law enforcement officers to detect and arrest alcohol-influenced drivers in accordance with these statutory limits. In an efforts to meet that objective, police officers, not only in Colorado but in all fifty of the United States, rely on a battery of standardized field sobriety tests (SFSTs). Observations of drivers' performance of the tests, together with driving pattern, appearance and manner, odor of alcohol, and other signs, underlie officers' arrest and release decisions.

To be genuinely useful, roadside tests must be valid and reliable; i.e., they must measure changes in performance associated with alcohol and they must do it consistently. To the extent that they meet the validity and reliability criteria, they can be expected to contribute to traffic safety by increasing the likelihood that alcohol-impaired drivers will be removed from the roadway by arrest. Importantly, they also will further serve the driving public's interest by decreasing the likelihood that a driver who is not alcohol-impaired will be mistakenly detained or arrested. Thus, the validity and reliability of the tests are important issues.

This study was undertaken specifically to extend study of the SFSTs from the laboratory setting to field use. The primary study question was, "How accurate are officers' arrest and release decisions when the SFSTs are used by trained and experienced officers?" Over a five-month period, officers from seven Colorado law enforcement agencies who volunteered for the study provided the records (N=305) from every administration of the SFSTs.

Using only the standardized 3-test battery (Walk-and-Turn, One-Leg Stand, Horizontal Gaze Nystagmus), officers seldom erred when they decided to arrest a driver.

Breath or blood specimens confirmed that 93% of the arrested drivers were above 0.05% BAC.

Officers were more likely to err on the side of releasing drivers than on the side of incorrectly arresting drivers. Given the difficulty of the task which confronts officers at roadside, in particular with alcohol-tolerant individuals, the finding that approximately one-third of the released drivers should have been arrested is not unexpected. However, it is important to note that officers' decisions to release *were correct* two-thirds of the time.

Overall, 86% of the officers' decisions to arrest or release drivers who provided blood or breath specimens were correct.

It is concluded that the SFSTs are valid tests; i.e., they serve as indices of the presence of alcohol at impairing levels. The study design did not support an examination of test-retest reliability. It should be noted, however, that the test battery appears to have served equally well across agencies and officers, strongly suggesting that it achieves acceptable reliability as well.

III. Study Design

This study was designed to:

(1) gather data to assign officers' decisions to the four cells of the decision matrix illustrated in Figure 1, and to

(2) examine the accuracy of the SFST battery when used in the widely varying weather conditions of Colorado winter, spring, and summer months.

Both the design and the execution of the study focused on the *integrity, completeness,* and *standardization* of the data.

It is important to note how the study population was defined and how the sample of subjects was drawn. Subjects were a subset of the population of drivers who were detained by police officers during the study period. They were drivers, both those arrested and those released, who were stopped by police officers during the study period *and who were requested to perform the SFSTs*. The officers' decisions about those drivers have been analyzed in terms of correct decisions (Correct Arrests and Correct Releases) and errors (Incorrect Arrests and Incorrect Releases).

In a broader context, the terms Correct Releases and Incorrect Releases could be extended to motorists who were stopped but who were not asked to perform the SFSTs. In many of those cases, the release decisions were correct, but it is likely that some of there were impaired drivers who were released without ever being asked to perform the SFSTs. Those individuals and those decisions are of interest and would be included in an assessment of overall proficiency in DUI detection and arrest. In fact, the entire population of impaired drivers, only some of whom are detected and stopped, is of interest in terms of traffic safety. In a validation study of SFSTs, however, the subjects were only those drivers who were asked to perform the tests.

VI. Summary and Discussion

In 1995, there is a sound base of scientific evidence to support the use of 0.10%, 0.08%, and 0.05% BACs as presumptive and per se alcohol limits for drivers. There also appears to be strong support for those statutes among citizens throughout broad (though not all) segments of society. A clear-cut shift of attitude over the past ten to fifteen years has resulted in anti-drunk driving sentiments by much of the driving population. In many social circles drinking-and-driving now is unacceptable behavior.

Why then, in a largely pro-alcohol enforcement climate, are there negative views of traffic officers' related activities? Citizens often seem to believe that enforcement is hit-or-miss and that officers regularly fail to remove many, if not most, alcohol-impaired drivers from the roadway. Some also seem to believe that the activities at roadside are arbitrary and calculated to harass. Although the multifaceted social and individual variables that underlie this paradox of concurrent anti-enforcement sentiment and anti-drunk driving sentiment are beyond the scope of this report, it is germane to consider one set of factors. At least part of this view of alcohol enforcement is attributable to a general failure to recognize the importance of traffic officers' duties, and to understand not only what their duties encompass but also the difficulty of their task.

Legislators, regulatory agencies, activities groups, and safety-conscious citizens alike sometimes appear to overlook the fact that traffic officers are pivotal in the deterrence of drunk driving. Unless officers are able to detect and arrest impaired drivers, those drivers will never enter the system of sanctions and, therefore, the existence of enabling statutes and anti-drunk driving sentiment will be largely irrelevant to them. Unfortunately, it is also true that the escape of detection and arrest on multiple occasions serves to reinforce the risky behavior. In effect, if no accident and no arrest occur on one or more occasions of drinking and driving, the citizen may conclude that driving after drinking is acceptable behavior on other occasions.

For a number of reasons, the difficulties associated with traffic officers' alcohol-enforcement responsibilities typically are underestimated. One reason is the misnomer "drunk driving," which suggests that their duty is to apprehend "drunks" or obviously-intoxicated individuals. If that were indeed the sole definition of alcohol enforcement duties, the task would be fairly straightforward. In reality, the risks associated with drinking and driving are not limited to obviously-intoxicated drivers, nor are officers' enforcement responsibilities restricted to those drivers.

Traffic officers are responsible for removing alcohol-impaired drivers from the roadway, and the Colorado statute sets the criterion alcohol levels at 0.10% and 0.05% BAC. In other jurisdictions the BAC limit is 0.08%, with additional lower levels for lesser charges and specific driver groups. Enforcement problems arise in part from the fact that although the evidence clearly establishes that driving skills are impaired at 0.10% BAC and lower, many, possibly even most, individuals who are willing to drive after drinking are not obviously intoxicated at those levels.

Leaving aside the problem of detecting alcohol impairment by the observation of driving behaviors, consider officers' task once they stop vehicles and contact drivers at roadside. Working under widely-varying conditions without special measurement apparatus, they must decide within a few minutes whether a specific driver is impaired by alcohol. Impaired drivers may or may not display atypical speech, appearance, or other personal characteristics, but in either circumstance the officers have no knowledge of any given driver's sober appearance and behavior. The task is further complicated by the tolerant drinker's normal appearance even at very high BACs.

Are there signs and symptoms which are reliably associated with 0.05% and 0.10%? With what level of confidence can the officer arrest or release a driver? With a decision criterion that minimizes incorrect arrests, the risk of releasing impaired drivers rises. On the other hand, a very strict decision criterion will decrease the number of impaired drivers who are released but at the risk of unnecessarily detaining non-impaired drivers. Is one risk preferable to the other? These questions define the context of traffic officers' alcohol enforcement activities and the background of the Colorado Validation Study of the SFSTs.

The records collected and analyzed during this study provide evidence that the SFSTs, as used at roadside by trained and experienced law enforcement officers, are valid indices of the presence of alcohol.

Records of all driver contacts, which resulted in administration of the SFSTs during the study period, were entered into the analysis. Overall, for 234 cases confirmed by breath or blood tests, officers' decisions to arrest and release were 86% correct, and 93% of their arrest decisions were correct.

It was not unexpected to find that officers were almost twice as likely to release incorrectly as to arrest incorrectly. Nonetheless, only 36% of the released drivers were at or above the statutory limit.

These findings obtained in the field with officers experienced with the use of SFSTs can be compared with findings from a laboratory setting with officers recently trained with the SFSTs. It should be kept in mind that the current data are not fully comparable to data from laboratory experiments, since there are differences other than time-since-training and laboratory vs. field. With that caution, the comparisons are instructive.

In an initial study of field sobriety tests with 238 laboratory subjects, officers' decisions overall were 76% correct (Burns and Moskowitz, 1977). Only 54% of their arrest decisions were correct, and only 8% of their release decisions were incorrect. In a second laboratory study, officers' decisions overall were 81% correct, their arrest decisions were 68% correct, and 14% of their release decisions were wrong (Tharp, Burns and Moskowitz, 1981). It is apparent that the arrest criterion was lower in the laboratory. The penalties for mistakes in a laboratory setting are, of course, fairly trivial compared to a real-world setting. The lower criterion, together with lack of experience with the tests, accounts for higher rates of incorrect arrests and lower rates of incorrect releases than found in this study. It is not surprising to find that officers in the field require more certainty about arresting a citizen and adopt a higher criterion with the result that they err in the direction of incorrect releases.

In summary, the data provide clear-cut findings about the use of SFSTs by officers in six Colorado communities. On a broader scale, they provide partial and tentative answers to some important questions. It is hoped that current data from a field setting will facilitate court proceedings with drivers arrested on DUI and DWAI charges. It is hoped, too, that the content of this report will add to the driving public's understanding of roadside enforcement activities, as well as to recognition of police officers' critical role in traffic safety.

ATTACHMENT C

A FLORIDA VALIDATION STUDY OF THE STANDARDIZED FIELD SOBRIETY TEST (S.F.S.T.) BATTERY

Marcelline Burns, Ph.D.
Southern California Research Institute
Los Angeles, California

Teresa Dioquino, Sergeant
Pinellas County Sheriff's Office
Largo, Florida

HS 178 R2/06

I. INTRODUCTION

During the years 1975-1981, a battery of field sobriety tests was developed under funding by the National Highway Traffic Safety Administration (NHTSA), U.S. Department of Transportation (Burns and Moskowitz, 1977; Tharp, Burns, and Moskowitz, 1981). The tests include Walk-and-Turn (WAT), One-Leg Stand (OLS), and Horizontal Gaze Nystagmus (HGN). NHTSA subsequently developed a training curriculum for the three-test battery, and initiated training programs nationwide. Traffic officers in all 50 states now have been trained to administer the Standardized Field Sobriety Tests (SFSTs) to individuals suspected of impaired driving and to score their performance of the tests.

At the time the SFSTs were developed, the statutory blood alcohol concentration (BAC) for driving was 0.10% throughout the United States. The limit now has been lowered in a number of states to 0.08% for the general driving population. "Zero tolerance" is in effect in some jurisdictions for drivers under age 21, and commercial drivers risk losing their licenses at a BAC of 0.04%. It is likely that additional states will enact stricter statutory limits for driving. In light of these changes, a re-examination of the battery was undertaken by McKnight et al. (1995). They reported that the test battery is valid for detection of low BACs and that no other measures or observations offer greater validity for BACs of 0.08% and higher.

The three tests have been incorporated into Drug Influence Evaluations (DIEs) which are conducted by certified Drug Recognition Experts (DREs) whenever an individual is suspected of being drug-impaired. As part of a DRE evaluation, the SFSTs provide important evidence of drug impairment and contribute to the DRE's three-part opinion:

- Is the individual impaired by a drug or drugs?
- If yes, is the impairment drug-related?
- If yes, what category or categories of drug account for the impairment?

A study was conducted in Colorado to examine the validity of the SFSTs when used by experienced officers in the field (Burns and Anderson, 1995). The design of the study insured that roadside testing was limited to the three-test battery, and that officers' decisions were not influenced either by the driver's performance of other behavioral tests or by measurement of BAC with a preliminary breath tester (PBT). The obtained data demonstrated that more than 90% of the officers' decisions to arrest drivers were confirmed by analysis of breath and blood specimens.

A recently-reported NHTSA-funded study was conducted by Anacapa Sciences, Inc. in collaboration with the San Diego Police Department to examine the validity of the SFSTs for both 0.08% and 0.04% (Stuster and Burns, 1997). Officers' estimates of whether a driver's BAC was above or below 0.08% or 0.04% were found to be more than 90% correct.

The Colorado and California studies provide relevant and current field data. The validity of the tests when they are administered in the context of drug evaluations was examined in a retrospective analysis of the records of the Phoenix DRE Unit (Adler and Burns, 1994). It was found that a suspect's performance of the tests provides valid clues of drug impairment.

The study reported here was conducted in collaboration with the Pinellas County Sheriff's Office (PCSO) and expands the examination of the SFSTs to the State of Florida. An overview of PCSO and the demographics for Pinellas County can be found in Appendix I.

II. STUDY BACKGROUND AND RATIONALE

During the early years of SFST use by law enforcement, legal challenges were relatively infrequent. For more than a decade now, however, defense counsel in many jurisdictions has sought to prevent the admission of testimony about a defendant's performance of the three tests. The objections, which continue to be persistent and vigorous in 1997, typically focus on test validity and reliability as demonstrated in the original laboratory research. It is entirely appropriate to inquire whether that early research to identify a best set of sobriety tests was conducted with scientific rigor. Beyond that inquiry, however, the data, which were obtained in a laboratory setting and now are more than twenty years old, are of little interest. Certainly, they are only marginally relevant to current roadside use of the tests. The questions which begs to be addressed in 1997 is whether the tests are valid and reliable indices of the presence of alcohol when they are used at roadside under present day traffic and law enforcement conditions.

Experience and confidence have a direct bearing on an officer's skill with roadside tests. In this regard, note that the officers who participated in the early SCRI studies had been only recently and briefly (4 hrs) trained to administer the test battery. There had been no time for them to use the tests in the field where they might have developed confidence in decisions based on them. Nonetheless, their decisions were 76% correct in the first study and 81% correct in the second study.

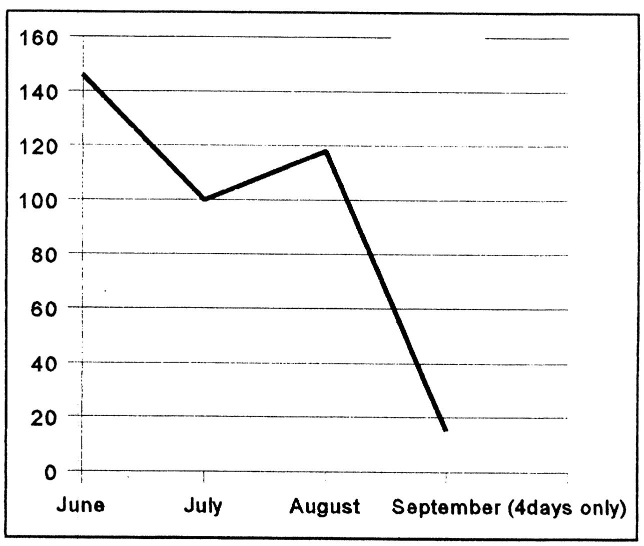
At this point in time, many traffic officers have had ten or more years' experience with the test battery and many report that they confidently rely on them. Since it seems unlikely in the extreme that they would continue to rely on tests which repeatedly lead to decision errors, it is a reasonable assumption that more often than not their roadside decisions *to arrest* are supported by measured BACs. Whether their decisions *to release* are correct is largely unknown since the released driver's BAC generally is not measured.

Traffic officers are charged with the detection and arrest of impaired drivers. Although their roadside duties are central to roadway safety, recognition of alcohol-impaired drivers can be difficult and is, therefore, subject to error. If officers are to effectively meet this particular enforcement responsibility, they need to augment their general observations of suspects with sensitive, accurate sobriety tests. The tests not only aid in the removal of dangerously impaired drivers from the roadway, they also protect the driver who is not alcohol or drug impaired from being improperly detained. Thus, rigorous examinations of the SFSTs are important to traffic safety.

V. RESULTS

The first record in the data base is for an arrest which occurred on June 1, 1997, and the last record is dated September 4, 1997. During the study period, 379 records were submitted for the study. Figure 3 graphs the total number of records by month. As expected, the initial activities generated enthusiasm among participants, and the largest number of citizen contacts occurred during the first project month. Although available time of participating officers was affected during July and August by scheduled training days and vacations, and although it typically is difficult to sustain the initial high interest level, the actual decline in arrests over the extended project period was not large. The final month is not comparable, since data collection extended only a few days into September.

FIGURE 3
SFST Records by Month



A. Total Sample and Measured BACs

Table 3 summarizes the disposition of 379 records obtained during this study. As can be seen in the table and in Figure 4, the BACs of 256 drivers were measured. Thus, BACs are available for 81.8% of the 313 cases entered into an analysis of officers' decisions. Evidential testing at the booking facility accounts for 210 of the BACs. Forty-six were obtained with a Preliminary Breath Testing (PBT) device. A log of all cases appears in Appendix IV.

VI. SUMMARY AND DISCUSSION

Legislators have lowered the limits for alcohol levels in drivers from 0.15%, which was the very early standard, to 0.10% or 0.08%. The lower statutory limits are soundly based in data from scientific experiments and form epidemiology and are an important step toward safer roadways. Whether their *full* potential for reducing alcohol-involved crashes can be reached, however, depends on effective enforcement. Failure to enforce a statute, whatever the reason for the failure, weakens that statute and may actually render it counterproductive to some degree.

Traffic officers are the first link in the series of events that brings a DUI driver into the criminal justice system. Unless officers are able to detect and arrest impaired drivers, those drivers will not experience the sanctions which are intended to deter impaired driving. Although there are many aspects to effective DUI enforcement, certainly it is crucial for officers to be proficient in assessing the alcohol impairment of drivers they detain at roadside.

As an aid to their roadside decisions, officers rely upon a battery of tests, the SFSTs, to augment their general observations of a driver. At this point in time, no other tests have been shown to better discriminate between impaired and unimpaired drivers. Nonetheless, the battery, and in particular Horizontal Gaze Nystagmus, frequently is attached vigorously during court proceedings. Thus, the examination of officers' decisions, based on the SFSTs, is of considerable interest.

If it can be shown that officers' reliance on the tests is misplaced, causing them frequently to err, then the officers, the courts, and the driving public need to be aware that the tests are not valid and that DUI laws are not bing properly enforced. If, on the other hand, it can be shown that officer typically make correct decisions, based on the SFSTs, perhaps the legal controversy that has centered on them for more than a decade can be diffused and court time can be devoted to more substantive issues.

The data obtained during this study demonstrate that 95% of the officers' decisions to arrest drivers were correct decisions. Furthermore, 82% of their decisions to release drivers were correct. It is concluded that the SFSTs not only aid police officers in meeting their responsibility to remove alcohol-impaired drivers from the roadway, they also protect the rights of the unimpaired driver. These data validate the SFSTs as used in the State of Florida by Pinellas County Sheriff's deputies who have been trained under NHTSA guidelines. SFST validity now has been demonstrated in Florida, California (1997) and Colorado (1995). There appears to be little basis for continuing legal challenge.

References

Burns, M. (1990) Development and Pilot Test of a Computer Data Base of Drug Evaluations of Impaired Drivers. No. 90M079578301D.

Burns, M. and Adler, E.V. (1994) Drug Recognition Expert (DRE) Validation Study. Final Report, E0072023, Governor's Office of Highway Safety, State of Arizona

Burns, M. and Anderson, E. (1995) A Colorado Validation Study of the Standardized Field Sobriety Test (SFST) Battery. Final Report, Colorado Department of Transportation.

Burns, M. and Moskowitz, H. (1977) Psychophysical Tests for DWI Arrest. Final Report, DOT-HS-802 424, NHTSA, U.S. Department of Transportation.

McKnight, A.J., Langston, E.A., Lange, J.E., and McKnight, A.S. (1995) Development of Standardized Field Sobriety Test for Lower BAC Limits (SFST-LL), Final Report, DTNH22-92-07000, NHTSA, U.S. Dept. of Transportation.

Stuster, J. and Burns, M. (1977) Validation of the Standardized Field Sobriety Test Battery at BACs Below 0.10 Percent. Final Report, DTNH22-95-C-05192, NHTSA, U.S. Dept. of Transportation.

Tharp, V., Burns, M. and Moskowitz, H. (1981). Development and Field Test of Psychophysical Tests for DWI Arrests. Final Report, DOT-HS-805-864, NHTSA, U.S. Dept. of Transportation.

VALIDATION OF THE STANDARDIZED FIELD SOBRIETY TEST BATTERY AT BACS BELOW 0.10 PERCENT

FINAL REPORT

Submitted to:
U.S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION

Jack Stuster
Marcelline Burns

August 1998

ANACAPA SCIENCES, INC.
P.O. Box 519
Santa Barbara, California 93102

[Blank Page]

Technical Report Documentation Page

1. Report No. DOT HS ?	2. Government Accession No.	3. Recipient's Catalog No.
4. Title and Subtitle *Validation of the Standardized Field Sobriety Test Battery at BACs Below 0.10 Percent*		5. Report Date August 1998
7. Author(s) Jack W. Stuster, PhD, CPE, and Marcelline Burns, PhD		6. Performing Organization Code: n/a 8. Performing Organization Report No. n/a
9. Performing Organization Name and Address Anacapa Sciences, Inc. P.O. Box 519 Santa Barbara, CA 93102		10. Work Unit No. (TRAIS) 11. Contract or Grant No. DTNH22-95-C-05192
12. Sponsoring Agency Name and Address National Highway Traffic Safety Administration 400 Seventh Street, SW Washington, D.C. 20590		13. Type of Report and Period Covered Final Report
15. Supplemental Notes James F. Frank, PhD was the Contracting Officer's Technical Represenative (COTR) for this project.		14. Sponsoring Agency Code

16. Abstract

This study evaluated the accuracy of the Standardized Field Sobriety Test (SFST) Battery to assist officers in making arrest decisions for DWI at blood alcohol concentrations (BACs) below 0.10 percent. NHTSA's SFST battery was validated at 0.10 percent BAC in 1981. The trend to reduce statutory DWI limits to 0.08 percent BAC prompted this research project.

The research was composed of several project tasks, including planning, site-selection, training, data entry, and data analysis, in addition to the actual conduct of a major field study. The City of San Diego, California, was selected as the site. Seven officers of the San Diego Police Department's alcohol enforcement unit were trained in the administration and modified scoring of NHTSA's SFST battery (i.e., Horizontal Gaze Nystagmus-HGN, Walk and Turn, and One Leg Stand). SFST scoring was adjusted: the observation of four HGN clues indicated a BAC ≥0.08 percent (rather than four clues indicating a BAC ≥0.10 percent), and the observation of two HGN clues indicated a BAC ≥0.04 percent. During routine patrols, the participating officers followed study procedures in administering SFSTs and completing a data collection form for each test administered. The officers' final step in each case was the administration of an evidentiary breath alcohol test.

Data analysis found the SFSTs to be extremely accurate in discriminating between BACs above and below 0.08 percent. The mean estimated and measured BACs of the 297 motorists tested were 0.117 and 0.122, respectively; the difference between the means (0.005 percent BAC) is very small and operationally irrelevant. Further, analyses found the HGN test to be the most predictive of the three components of the SFST battery (r=0.65), however a higher correlation was obtained when the results of all three tests were combined (r=0.69).

Decision analyses found that officers' estimates of whether a motorist's BAC was above or below 0.08 or 0.04 percent were extremely accurate. Estimates at the 0.08 level were accurate in 91 percent of the cases, or as high as 94 percent if explanations for some of the false positives are accepted. Officers' estimates of whether a motorist's BAC was above 0.04 percent but lower than 0.08 percent were accurate in 94 percent of the decisions to arrest and in 80 percent of cases overall. Also, the officers and prosecutors who were interviewed about the SFSTs found the test battery to be acceptable for field use to establish probable cause for DWI arrest.

The results of this study provide clear evidence of the validity of the Standardized Field Sobriety Test Battery to discriminate at 0.08 percent BAC, using a slightly modified scoring procedure. Further, study results strongly suggest that the SFSTs also accurately discriminate at 0.04 percent BAC.

17. Key Words DWI, DUI, detection, field sobriety, performance tests, alcohol, law enforcement, highway safety	18. Distribution Statement		
19. Security Classif. (of this report) Unclassified	20. Security Classif. (of this page) Unclassified	21. No. of Pages	22. Price

[Blank Page]

EXECUTIVE SUMMARY

This report documents the research activities and presents the results of a study conducted for the National Highway Traffic Safety Administration (NHTSA) to evaluate the accuracy of the Standardized Field Sobriety Test (SFST) Battery to assist officers in making arrest decisions and to discriminate blood alcohol concentrations (BACs) below 0.10 percent. NHTSA's SFST battery was validated at 0.10 percent BAC in 1981. The trend to reduce statutory DWI limits to 0.08 percent BAC prompted this research project.

DESCRIPTION OF THE RESEARCH

The research was composed of several project tasks, including planning, site-selection, training, data entry, and data analysis, in addition to the actual conduct of a major field study. The City of San Diego, California, was selected as the site of the field study. Seven officers of the San Diego Police Department's alcohol enforcement unit were trained in the administration and modified scoring of NHTSA's SFST battery (i.e., Horizontal Gaze Nystagmus, Walk and Turn, and One Leg Stand). SFST scoring was changed slightly: the observation of four horizontal gaze nystagmus (HGN) clues indicated a BAC ≥0.08 percent (rather than four clues indicating a BAC ≥0.10 percent), and the observation of two HGN clues indicated a BAC ≥0.04 percent. During routine patrols, the participating officers followed study procedures in administering SFSTs and completing a data collection form for each test administered during the study period. The officers' final step in each case was the administration of an evidentiary breath alcohol test.

RESULTS

The participating officers completed a total of 298 data collection forms; only one case was eliminated from analysis because the motorist refused all forms of BAC testing. Data analysis found the SFSTs to be extremely accurate in discriminating between BACs above and below 0.08 percent. The mean estimated and measured BACs of the 297 motorists tested were 0.117 and 0.122, respectively; the difference between the means (0.005 percent BAC) is very small and operationally irrelevant. Further, analyses found the HGN test to be the most predictive of the three components of the SFST battery (r=0.65), however a higher correlation was obtained when the results of all three tests were combined (r=0.69).

The results of decision analyses provide clear indication of SFST accuracy. Decision analyses found that officers' estimates of whether a motorist's BAC was above or below 0.08 or 0.04 percent were extremely accurate. Estimates at the 0.08 level were accurate in 91 percent of the cases, or as high as 94 percent if explanations for some of the false positives are accepted. Officers' estimates of whether a motorist's BAC was above 0.04 but under 0.08 were accurate in 94 percent of the decisions to arrest and in 80 percent of the relevant cases, overall.

Finally, the officers and prosecutors who were interviewed about the SFSTs found the test battery to be fully acceptable for field use to establish probable cause for DWI arrest.

IMPLICATIONS

The results of this study provide clear evidence of the validity of the Standardized Field Sobriety Test Battery to discriminate above or below 0.08 percent BAC, using a slightly modified scoring procedure. Further, study results strongly suggest that the SFSTs also accurately discriminate above or below 0.04 percent BAC.

TABLE OF CONTENTS

LIST OF TABLES

Table **Page**

FIGURES

Figure **Page**

ACKNOWLEDGMENTS

The National Highway Traffic Safety Administration and Anacapa Sciences, Inc., are grateful to the managers and officers of the San Diego Police Department for their cooperation during the performance of this research project. Special thanks to Officer Doug English, project liaison, and Sergeant Bill Snyder, supervisor of the Traffic Division's alcohol-enforcement unit.

INTRODUCTION

Beginning in 1975, the National Highway Traffic Safety Administration (NHTSA) sponsored research that led to the development of standardized methods for police officers to use when evaluating motorists who are suspected of Driving While Impaired (DWI).[1] Beginning in 1981, law enforcement officers have used NHTSA's Standardized Field Sobriety Test (SFST) battery to help determine whether motorists who are suspected of DWI have blood alcohol concentrations (BACs) greater than 0.10 percent. Since that time, many states have implemented laws that define DWI at BACs *below* 0.10. This report presents the results of research performed to systematically evaluate the accuracy of NHTSA's SFST battery to discriminate above or below 0.08 percent and above or below 0.04 percent blood alcohol concentration.

The report is presented in four sections. This brief Introduction presents the objectives of the research, provides a summary of the relevant traffic safety issues, and discusses the historical context of the study. The second section of the report describes the research tasks that were performed. The third section presents the results of the study. The final section of the report discusses the implications of the study results.

BACKGROUND

Nearly 1.4 million people have died in traffic crashes in the United States since 1966, the year of the National Traffic and Motor Vehicle Safety Act (which led to the creation of NHTSA in 1970). During the late 1960s and early 1970s more than 50,000 people lost their lives each year on our nation's public roads; more than half of the motorists killed had been drinking. Traffic safety has improved considerably since that time: the annual death toll has declined to about 40,000, even though the numbers of drivers, vehicles, and miles driven all have greatly increased. The dramatic improvements in traffic safety are reflected in the change in fatality rate per 100 million vehicle miles traveled: The fatality rate fell from 5.5 in 1966 to 1.7 in 1996 (FARS--Fatal Analysis Reporting System--96), a 69 percent improvement. Figure 1 illustrates this important trend. When miles traveled are considered, the likelihood of being killed in traffic in 1966 was more than three times what it is today.

Despite the significant improvements in traffic safety during the past 17 years, an average of more than 115 people still die each day from motor vehicle crashes in the United States. It is estimated that 41 percent of the drivers who die in crashes have been drinking.

[1] Various terms are used throughout the United States for offenses involving drinking and driving. In this report, Driving While Impaired (DWI) is used to refer to all occurrences of driving at or above the legal blood alcohol concentratiion (BAC) limit of a jurisdiction.

An emphasis on DWI enforcement since 1980 has been a factor in the significant improvement in traffic safety, as represented by declining fatal and alcohol-involved crash rates. NHTSA-sponsored research contributed substantially to the improved condition, in part, by providing patrol officers with useful and scientifically valid information and training materials concerning the behaviors that are most predictive of impairment. In particular, NHTSA sponsored research that led to the development of a DWI detection guide that listed 20 driving cues and the probabilities that a driver exhibiting a cue would have a BAC of at least 0.10 percent (Harris et al., 1980; Harris, 1980). A similar study was conducted recently that identified 24 driving cues that are predictive of DWI at the 0.08 level (Stuster, 1997). NHTSA also sponsored research that led to the development of a motorcycle DWI detection guide (Stuster, 1993). NHTSA's DWI training materials, based on the results of these studies, have exposed the current generation of law enforcement officers in the U.S. to information critical to DWI enforcement by providing a systematic, scientifically valid, and defensible approach to on-the-road DWI detection.

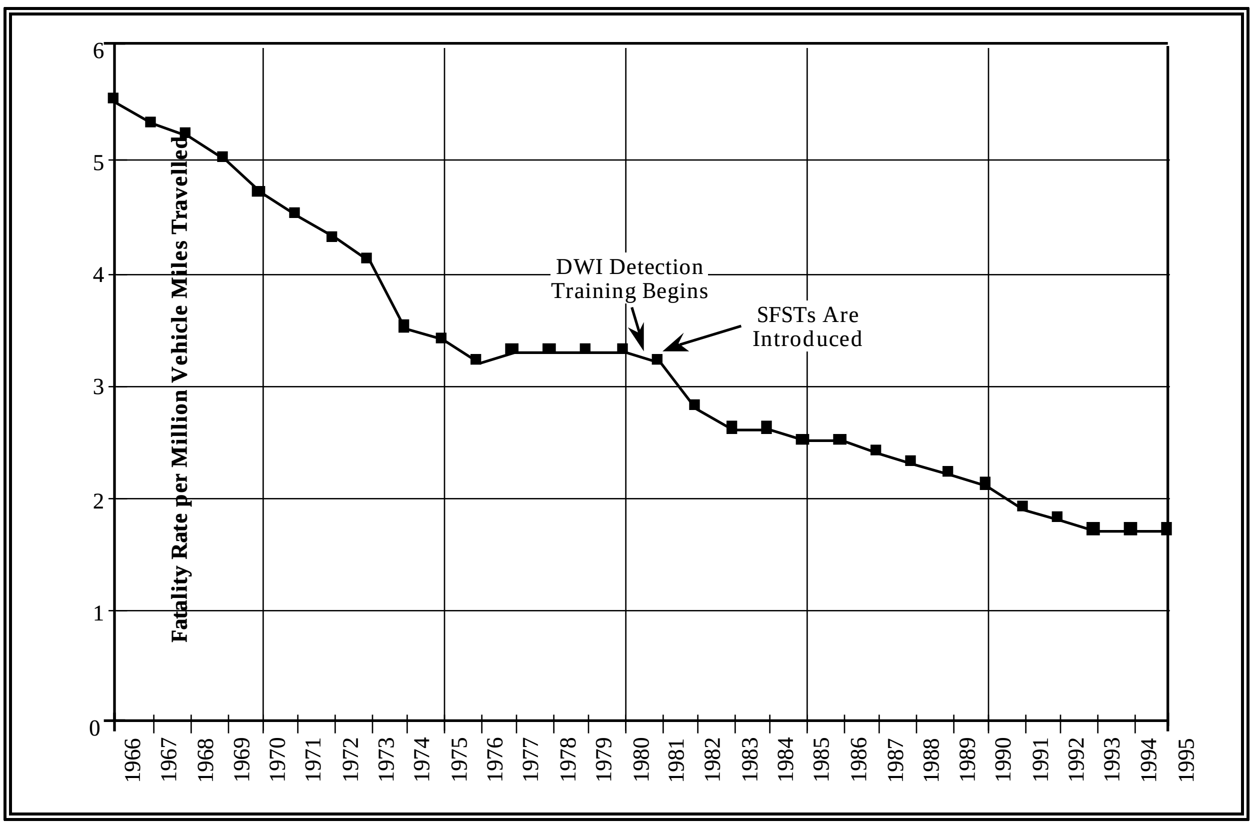


Figure 1. Fatality rates per million miles traveled in the U.S.

At the same time NHTSA was providing patrol officers with information concerning the driving behaviors that are the most predictive of impairment, the agency also sponsored research that led to the development of a standardized battery of tests for officers to administer to assess driver impairment after an enforcement stop has been made. Drs. Marcelline Burns and Herbert Moskowitz conducted laboratory evaluations of several of the tests that were most frequently-used by law enforcement officers at the time (Burns and Moskowitz, 1977). In addition to a variety of customary roadside tests (e.g., finger-to-nose, maze tracing, backward counting), the researchers evaluated measures of an autonomic reaction to central nervous system depressants, known as horizontal gaze nystagmus. Horizontal gaze nystagmus (HGN) is an involuntary jerking of the eye that occurs naturally as the eyes gaze to the side. Aschan (1958) described studies that linked various forms of nystagmus to BAC, and Wilkinson, Kime, and Purnell (1974) reported consistent changes in horizontal gaze nystagmus with increasing doses of alcohol. At the time Burns and Moskowitz were conducting their seminal research for NHTSA, horizontal gaze nystagmus recently had been found to reliably predict BACs in a study conducted in Finland (Pentilla, Tenhu, and Kataja, 1974). Further, Lehti (1976) had just calculated a strong correlation between BAC and the onset of nystagmus.

All of the field sobriety tests evaluated by Burns and Moskowitz were found to be sensitive to BAC in varying degrees, at least under laboratory conditions. In addition, all of the tests showed a consistent increase in correlations with increasing BACs. Statistical analyses found the horizontal gaze nystagmus test to be the most predictive of the individual measures. However, the combined scores of three of the tests (One-Leg Stand, Walk-and-Turn, and Horizontal Gaze Nystagmus) provided a slightly higher correlation than the horizontal gaze nystagmus test by itself. The combined score correctly discriminated between BACs below or above 0.10 in 83 percent of the subjects tested in the original study (Burns and Moskowitz, 1977).

NHTSA immediately sponsored a subsequent study to standardize the test administration and scoring procedures and conduct further laboratory and field evaluations of the new battery of three tests. The researchers found that police officers tended to increase their arrest rates and were more effective in estimating the BACs of stopped drivers after they had been trained in the administration and scoring of the Standardized Field Sobriety Test battery. The results of this important study were documented in meticulous detail in the technical report, *Development and Field Test of Psychophysical Tests for DWI Arrest* (Tharp, Burns, and Moskowitz, 1981). That report has been cited throughout the U.S. to establish the scientific validity of the SFST battery and to support officers' testimony in court. NHTSA's SFST battery is described in Appendix A.

During the past 16 years, NHTSA's SFSTs largely have replaced the unvalidated performance tests of unknown merit that once were the patrol officer's only tools in helping to make post-stop DWI arrest decisions. Regional and local preferences for other performance tests still exist, even though some of the tests have not been validated. Despite regional differences in what tests are used to assist officers in making DWI arrest decisions, NHTSA's SFSTs presently are used in all 50 states. NHTSA's SFSTs have become the standard pre-arrest procedures for evaluating DWI in most law enforcement agencies.

The horizontal gaze nystagmus (HGN) test is considered by many law enforcement officers to be a foolproof technique (sometimes called a “silver bullet”) that provides indisputable evidence of alcohol in a motorist’s system. The normal variation in human physical and cognitive capabilities, and the effects of alcohol tolerance, result in uncertainties when arrest decisions are made exclusively on the basis of performance tests. These uncertainties have resulted in large proportions of DWI suspects being released rather than detained and transported to another location for evidentiary chemical testing. This is important because experienced drinkers often can perform physical and cognitive tests acceptably, with a BAC greater than 0.10 percent. However, most experienced drinkers cannot conceal the physiological effects of alcohol from an officer skilled in HGN administration. This is because horizontal gaze nystagmus is an involuntary reaction over which an individual has absolutely no control.

THE RESEARCH

This section provides a detailed description of all tasks performed during the field validation of the Standardized Field Sobriety Test Battery for use at 0.08 percent BAC. The technical approach to the research involved the performance of six major project tasks, as summarized in Figure 2 and described in the following pages.

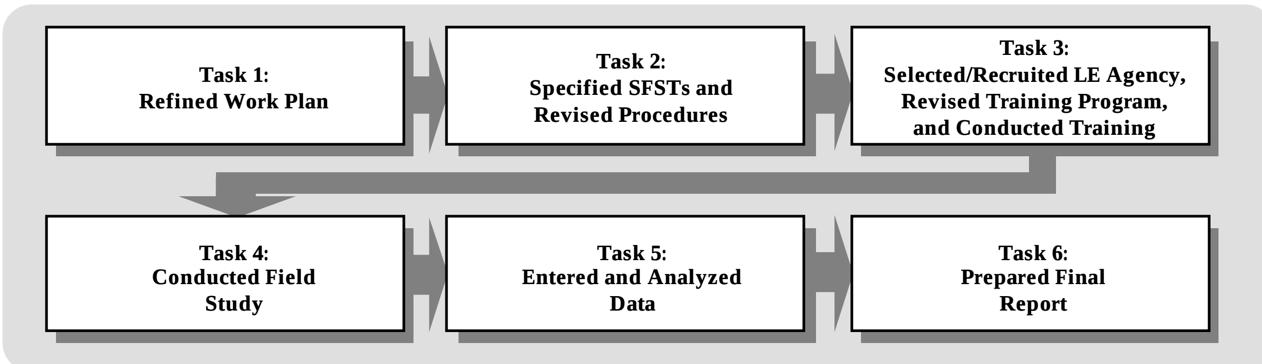


Figure 2. Sequence of major project tasks.

TASK 1: REFINED WORK PLAN

The objectives of the first project task were to meet with the Contracting Officer's Technical Representative (COTR) and other NHTSA SFST experts to discuss the project and to refine the proposed Work Plan based on those discussions. The project kick-off meeting was held at NHTSA headquarters on 24 October 1995. Substantive discussions with NHTSA personnel during and following the meeting contributed to the development of the technical approach described here.

TASK 2: SPECIFIED SFSTS AND REVISED PROCEDURES

Based on the widespread use and acceptance of NHTSA's Standardized Field Sobriety Test (SFST) Battery, validated at 0.10 percent BAC, NHTSA sponsored the current study to evaluate the SFSTs at lower BACs. The only modifications to be made to the SFSTs would be: 1) for officers to use the exhibition of four clues as an indication of BACs at the 0.08 level or greater (as officers presently are trained to use four clues as an indicator of BACs at 0.10 percent or greater), and 2) for officers to use the exhibition of two HGN clues as an indication of BACs greater than zero, but *below* 0.08 percent.

TASK 3: SELECTED AND RECRUITED LAW ENFORCEMENT AGENCY AND CONDUCTED TRAINING

This project task was composed of four subtasks, as described in the following paragraphs.

SUBTASK 3.1: IDENTIFIED SITE SELECTION CRITERIA

The site-selection criteria were:

- Candidate sites must employ lower legal BAC levels (0.08 for adults and zero tolerance for youth under 21 years).
- Candidate sites must generate a sufficient number of traffic enforcement stops and DWI arrests for accurate assessment of the tests' reliability and validity.
- Participating officers must have received NHTSA-approved SFST training from a certified instructor, possess at least one year of field experience administering SFSTs, and receive refresher training from project staff.
- Managers and officers of the participating law enforcement agency must agree to abide by the research procedures for the duration of the field study. For example, officers may use only the SFST Battery (and no other tests) together with their observations of the driver's general appearance and speech to make their arrest decisions; and, all test administrations must be recorded and submitted. Only agencies that could assure an extremely high level of cooperation and commitment would be recommended for participation.
- The site must have the capability of generating cases that represent the full range of alcohol experience. For example, a city with a disproportionate number of younger drivers might be more appropriate to ensure samples of sufficient size for the younger age categories.

SUBTASK 3.2: IDENTIFIED CANDIDATE SITES AND APPLIED SELECTION CRITERIA

Several factors constrained the site-selection process and limited the possible candidates for participation in this study. First, at the time the project was conducted, California, Oregon, and Utah were the only states that met both of the BAC-related site-selection criteria, namely a 0.08 BAC limit for DWI and a zero tolerance law for drivers under 21 years of age. Second, it was important to restrict the data collection period, to the extent possible, because it was believed that an extremely long data collection period might result in officers deviating from the study procedures. Strict adherence to study procedures was considered essential to ensuring the internal validity of the study.

The site-selection strategy adopted was to recruit a police department that serves one large city--a city large enough to generate a sufficient number of SFST administrations for statistical analysis by itself. A large city also was likely to have a traffic division with a dedicated DWI unit composed of trained experts. Focusing on traffic enforcement specialists would permit us to restrict participation in the study to officers who already had received NHTSA-approved SFST training and had additional field experience administering the test battery. Prior training in SFST administration was an important site-selection and methodological issue.

In the study that validated the SFST battery in 1981, all officers of an agency could participate, following training provided by the researchers. The procedure followed during the original study was appropriate then because no other officers (anywhere) had yet to receive the training. However, that procedure could not be followed in the current study because thousands of officers have received SFST training since 1981. Only trained and experienced test administrators could be permitted to participate in the *current* study to avoid confounding study results with the effects of substantially different officer skill and experience levels in SFST administration and scoring. Officers who are formally trained and experienced in SFST administration tend to be concentrated in traffic enforcement and special DWI units.

This site-selection strategy was judged to provide the best approach to achieve the objectives of the current study, and the City of San Diego, California, was identified as the leading candidate community when the site-selection criteria were applied. The San Diego Police Department serves a resident population of more than one million, with a much larger service population attributable to tourism and several local military installations. The manner in which the San Diego Police Department satisfied the site-selection criteria is outlined below.

Number of SFST Administrations

The San Diego Police Department maintains a traffic division composed of 50 officers, including ten officers and a sergeant who form the alcohol enforcement unit. The alcohol enforcement unit deploys four or five officers on each night, Wednesday through Sunday. The time necessary to complete the associated paperwork usually limits each officer to a maximum of two DWI arrests each night. This results in about 130 arrests by officers of the special unit during a four week period. The other members of the traffic division, combined, make an additional 130 DWI arrests each month. San Diego Police Department officers do not hesitate to arrest drivers for BACs below 0.08 percent if they exhibit any evidence of impairment, even though low-BAC arrests usually are not prosecuted by the local district attorney.

Demographic Considerations

The Work Plan discussed the importance of selecting a site that offers cases for analysis that represent the full range of driver ages and BACs of interest. It was believed that a younger, rather than an older, driver population would result in more cases of zero tolerance violations and more SFST administrations overall. In this regard, San Diego and the surrounding area is home to four major US Navy bases and both the Navy and Marine Corps training centers. The area also is home to three major universities and several smaller colleges and technical schools.

Willingness to Participate

Naturally, formal approval by senior managers is required before any law enforcement agency can participate in a traffic safety study. Further, a manager's personal interest in a study that results in command emphasis concerning participation greatly contributes to the success of a project because of the quasi-military organizational structure of law enforcement agencies. That is, if managers believe participation to be of value to an agency they will direct their officers to follow the study procedures. In this regard, the commanding officer and other senior managers of the San Diego Police Department expressed their considerable interest in the study and directed their personnel to cooperate with the study team.

Command emphasis is an important component to ensure adherence to study procedures, but it is not sufficient; the participating officers also must be committed to the study. The willingness of a law enforcement agency to participate in a traffic safety study also can be measured, although subjectively, by the attitudes of field officers when discussing the general and specific issues involved in the study. The officers of the San Diego Police Department with whom we spoke about the field validation expressed genuine interest in the study and eagerness to be selected for participation.

Finally, the requirement for an agency to modify its established procedures to accommodate special study procedures usually is somewhat negotiable in a traffic safety study, but deviations from established study procedures were not negotiable in this field validation. It was explained that police managers and all participating officers must agree to abide by the study procedures to ensure the internal validity of study results. This was an area for concern to the project team because the San Diego Police Department's established DWI procedures included administering three field sobriety tests in addition to the three NHTSA SFSTs. A firm study requirement was that no other tests be administered to subjects because they might influence an officer's BAC estimates; that is, all officer-estimates of BAC must be based *exclusively* on results of the NHTSA SFST battery using the slightly modified scoring system. In this regard, San Diego police managers inquired with their district attorney and DWI supervisors, those who might object to the restriction, and found no opposition. In fact, it was mentioned that restricting sobriety testing to the three SFSTs would help streamline the procedures for everyone.

Prior SFST Training

All members of the San Diego Police Department's special alcohol-enforcement unit previously had received SFST training that was administered according to NHTSA-approved procedures and curriculum by certified DWI instructors. Although approximately half of the other members of the Traffic Division also had received SFST training, it was determined that the alcohol-enforcement unit would generate a sufficient number of SFST administrations for statistical analysis. All of the participating officers would receive a four-hour refresher training course prior to beginning the field study.

SUBTASK 3.3: RECRUITED LAW ENFORCEMENT AGENCY TO PARTICIPATE IN THE STUDY

NHTSA reviewed the site recommendations and approved San Diego as the site for the field study. Further discussions were held with managers and officers of the San Diego Police Department and a Memorandum of Agreement was signed that specified all study procedures and requirements.

SUBTASK 3.4: DEVELOPED SFST TRAINING PROGRAM

The experimental requirement that all participating officers be both trained and experienced in SFST administration eliminated the need to develop a special training program for this study. It was considered essential that the existing, NHTSA-approved SFST training program remain the training standard for the field evaluation. Because all participating officers already had received NHTSA-approved

SFST training, only a refresher program would be required. A four-hour refresher-training program was developed, based on the (October 1995) NHTSA curriculum. The purposes of the refresher training were to instruct the officers concerning the modified scoring system and obtain confirmation that all participants were administering and scoring the SFST battery correctly before beginning the field study.

TASK 4: CONDUCTED THE FIELD VALIDATION STUDY

Systematic evaluation of the SFSTs to assist officers in making arrest decisions at BACs below 0.10 percent, under field conditions, was the ultimate objective of this research. Although existing tests were the subject of the evaluation, the reasons for conducting the field study were the same as if the tests previously had not been validated. First, it was necessary to determine the accuracy of the modifications to test scoring, compared to actual BAC levels measured through other means. For cases in which the driver was arrested for DWI, correspondence would be assessed between scored performance on the SFSTs and BAC, as determined by breath test (blood and urine tests were discouraged but used if subjects refused to comply with breath testing). For cases in which a subject was administered SFSTs but then released on the basis of low estimated BAC, hand-held breath testing devices were used to establish actual BAC. The second purpose of the evaluation was to identify problems with test application in the field, which might include test administration, scoring procedures, or other factors that might affect the use of the tests by law enforcement personnel. Third, the courts' acceptance of evidence gathered using the slightly revised scoring procedures in the field evaluation would be assessed.

SUBTASK 4.1: PREPARED FIELD EXPERIMENT PLAN

A Field Experiment Plan was developed and approved by NHTSA to guide the conduct of the field study. The plan included the seven components depicted in Table 1 and discussed below.

TABLE 1
COMPONENTS OF THE FIELD EXPERIMENT PLAN

Component 1:	Subjects
Component 2:	Independent Variables
Component 3:	Criterion Measures
Component 4:	Materials
Component 5:	Procedures
Component 6:	Controls
Component 7:	Data Analyses

Components 1 and 2: Subjects and Independent Variables

The primary independent variable of interest, BAC, was inextricably linked to the subjects in this study. Specifically, the experiment plan focused on obtaining data from adult motorists who were suspected of exceeding the legal limit of 0.08 percent BAC and youths under 21 who were suspected of exceeding the "zero-tolerance" legal limit of 0.00. The accuracy of the SFSTs to discriminate at 0.08 and 0.04 percent BAC could not be assessed without data from individuals who had BACs over and *under* these values. Therefore, it was important to obtain BAC estimates from individuals who had both passed and failed the standardized field sobriety tests.

Component 3: Criterion Measures

The only appropriate criterion measure to assess the accuracy of SFSTs is BAC. Measures of impairment are irrelevant because performance of the SFSTs must be correlated with BAC level, rather than driving performance. BAC provides an objective and reliable measure that states have recognized as presumptive and/or per se evidence of impairment, depending on the statute. To obtain these criterion measures, it was determined that all drivers who were administered the SFST Battery must be tested for BAC, regardless of the results of the SFSTs. In other words, it would be essential to test the individuals who were judged to have BACs below the relevant statutory level and who subsequently would be released. Participating officers were instructed concerning the importance of obtaining BAC data for all subjects, in order to calculate the accuracy of the tests.

All police officers participating in the study were equipped with NHTSA-approved, portable breath testing devices to assess the BACs of all drivers who were administered the SFSTs, including those who were released without arrest. Further, arrested subjects were tested both in the field with a portable device and at the booking site. The use of passive alcohol sensors (PAS) during the study was not permitted.

Component 4: Materials

Only the existing SFSTs were to be administered, which require no equipment. A pen, pencil, or small flash light frequently are used by officers as a stimulus or target for the HGN test, but a finger can be used with equal effectiveness.

The data collection form used in the study is presented as Figure 3. The data collection form was extremely important in this study for several reasons. As is the case in most field studies, the form must be as simple to complete as possible to minimize the workload of participating officers. In the present case, it also was important for the form to be designed to guide the officer in the administration of the SFSTs, to facilitate standardization and systematic scoring of the tests. In addition, the form designed for this study had to both encourage and provide assurances that officers had followed the study procedures. Most important, it was essential that officers would conduct a breath test and record actual subject BAC as the final step of the process; that is, actual BACs were to be entered on the form only after BAC estimates based on SFST performance had been recorded. Hand-held breath testing devices with digital displays were used for this purpose.

Component 5: Procedures

The sixth component of the field experiment plan was the specification of procedures to be used for administering the tests and obtaining independent measures of BAC. The procedures to be followed by participating officers were listed as a series of six numbered steps on the data collection form that was used in the field study. The study procedures were to be followed whenever a participating officer suspected an adult driver of being alcohol impaired or a youth under 21 of having a BAC greater than zero. In practice, officers administered the SFSTs to all motorists who exhibited *any* objective behavior or other cue associated with having consumed alcohol, even if impairment was not evident. A breath, blood, or urine test was administered to all motorists who performed the SFSTs, but only after the officer had made an arrest / no arrest decision based on the officer's scoring of the driver's SFST performance, and recorded a BAC estimate. The data collection form structured the procedure by presenting all officer actions as a series of numbered steps. Requiring officers to record the time of BAC estimates and BAC tests ensured that officers' estimates were not influenced by the results of the chemical tests. Completed data collection forms were sent to Anacapa Sciences on a weekly basis for data entry.

In some states, such as California, officers have the right to administer a breath test to a driver who has exhibited any objective sign of alcohol-consumption. Compliance is mandatory if the officer can articulate a reasonable suspicion of the motorist having consumed alcohol (such as the odor of an alcoholic beverage). SFSTs were administered only to drivers who exhibited some objective DWI cue, thus, no problems were experienced in obtaining BAC data, even from subjects whose SFST performance was acceptable. The field breath test was conducted as the final step after the SFST procedure was completed, which is the *de facto* procedure followed by most officers who are equipped with field breath testing devices.

To further ensure compliance with study procedures, the participating law enforcement officers signed a statement affirming that they would abide by the established study procedures. In addition, project staff monitored the data collection effort, periodically riding along with participating officers to ensure that study procedures were being followed.

Component 6: Controls

Extraneous variables that could affect the outcome of the study must be controlled to the extent possible. The controls that were implemented to ensure the validity of study results have been discussed in this section, including systematic procedures and the use of only trained and experienced officers.

Component 7: Data Analyses

The data analysis plan was designed to answer the following research questions.

- How accurately do the tests discriminate between subjects who are above or below 0.08 and 0.04 percent BACs?
- Which of the components of the SFST battery is / are the best predictor(s) of BAC?
- How reliable, or consistent, are the tests?
- Are the tests usable by police officers? Are they readily accepted by officers and prosecutors?

NHTSA/ANACAPA SFST VALIDATION DATA FORM

Officer ID:_____________ Driver: ☐ Adult ☐ Male ☐ Under 21 ☐ Female
Age:_______

Month_____Day_____1996 Time of Stop:_______hr _______min

FIELD SOBRIETY TESTS ADMINISTERED ☑

1. HORIZONTAL GAZE NYSTAGMUS TEST ☐

	Clues: Right Eye	Clues: Left Eye
Lack of smooth pursuit		
Nystagmus at maximum deviation		
Nystagmus onset before 45 degrees		
Clues	+	=

Total HGN Clues (6 clues maximum) ☐
4 or more ≥ 0.08 / 2 or more ≥ 0.04

2. ONE LEG STAND TEST ☐

(seconds)	Clues: *0-10*	*11-20*	*21-30*
Sways while balancing			
Uses arms for balance			
Hops to maintain balance			
Puts foot down			
Cannot perform test (4 clues -- maximum)			
Total One Leg Stand Clues			

2 or more ≥ 0.08

3. WALK AND TURN TEST ☐

	Clues
Loses balance while listening to instructions	
Starts before instructions are finished	

	1st 9	2nd 9
Stops while walking		
Does not touch heel to toe		
Steps off the line		
Raises arms for balance		
Incorrect number of steps		
Trouble with turn (explain)__________________		
Cannot perform the test (8 clues -- maximum)		
Total Walk and Turn Clues		

2 or more ≥ 0.08

4. ESTIMATE OF BAC BASED ON SFSTs: ☐

Time of estimation _______hr _______min

5. SUBJECT BAC ☐ Refused

PBT ☐ **Time of PBT test _______hr _______min**

Other ☐ **Time of other test _______hr _______min**

☐ Breath ☐ Blood ☐ Urine

6. DISPOSITION: ☐ Warning ☐ Citation ☐ DUI Arrest

Figure 3. Data collection form used in the validation study.

SUBTASK 4.2. TRAINED OFFICERS IN THE USE OF THE SFSTS

Dr. Marcelline Burns, one of the investigators who developed the SFST battery, developed and conducted the refresher training for the participating officers. Dr. Burns' research and training experience in this field ensured that officers received effective and credible refresher instruction. Dr. Burns was assisted in the training session by the project director and NHTSA COTR.

SUBTASK 4.3. IMPLEMENTED EXPERIMENTAL DESIGN AND COLLECTED DATA

Implementation of the experiment design began immediately following the completion of officer refresher training on 23 May 1996 and continued through 9 November. Specific study procedures were:

- Only officers who were members of the San Diego Police Department's alcohol-enforcement unit and who received NHTSA-approved SFST training participated directly in the study. Dr. Marcelline Burns provided brief "refresher" training to all participating officers to ensure a consistent and systematic approach to SFST administration during the study.

- Upon commencement of the study period, participating officers used only the SFST Battery (i.e., Horizontal Gaze Nystagmus, Walk and Turn, One Leg Stand) together with their observations of a driver's general appearance and speech, to establish inferences about a subject for whom there was reasonable suspicion of driving while impaired. In other words, no tests other than the three SFSTs were performed.

- Participating officers performed the administration steps in the sequence specified on the data collection form; that is, they,

  1. Administered the **Horizontal Gaze Nystagmus** test and recorded results.

  2. Administered the **One Leg Stand** test and recorded results.

  3. Administered the **Walk and Turn** test and recorded results.

  4. Used the scoring systems that were printed on the data collection form (by counting test "clues") to estimate the subject's BAC. Recorded their estimate of the subject's BAC based on SFST performance, together with their observations of the subject's general appearance and speech. Also, they recorded the time when their estimate was made.

  5. Checked the box that indicated the disposition of the stop: Warning, Citation, or Arrest.

  6. Recorded the subject's BAC obtained from a field breath test; or, checked the appropriate box for other tests or responses. Blood and urine test results were provided later; every effort was made to obtain a breath test result for all subjects. Recorded the time when the BAC test was performed.

- Obtained a BAC for all subjects who were administered SFSTs as the final step in the test administration procedure. BACs were obtained for all subjects tested including those subjects who officers estimated, on the basis of SFST results, to have BACs below the legal limit.

- Participating officers completed and submited a data collection form for each subject tested during the study period; that is, all administrations of the SFST battery by participating officers were recorded on a data collection form and submitted for analysis.

- All completed data collection forms were sent to Anacapa Sciences, Inc., for data entry and analysis.

SUBTASK 4.4 CONDUCTED COURT AND POLICE INTERVIEWS

The final data collection task was the conduct of open-ended interviews with participating police officers and prosecutors who were exposed to the new SFSTs during DWI cases. The purposes of the interviews were to determine if the tests were acceptable to the officers for use in the field and to the prosecutors for use of test results in court.

TASKS 5 AND 6: ANALYZED DATA AND PREPARED FINAL REPORT

All data collection forms were returned to Anacapa Sciences, Inc., sequentially numbered, and the contents entered into a computerized data base. Data analyses were performed by the project director and Dr. Marcelline Burns. The results of those analyses are presented in the following section of this report.

RESULTS

This study was conducted to evaluate the accuracy of NHTSA's Standardized Field Sobriety Test Battery in assisting officers to make arrest decisions at BACs above and below 0.08 percent under field conditions. A secondary objective of the study was to evaluate the possibility that the test battery also could be used to assist officers in making arrest decisions at BACs lower than 0.08 percent.

The seven participating officers from the San Diego Police Department's alcohol-enforcement unit completed a total of 298 data collection forms during the study period; only one case was eliminated from analysis because the subject refused to submit to any form of BAC testing. Officer compliance with study procedures and motivation to participate in the study remained high throughout the data collection period.

EVALUATION OF SFST ACCURACY

Three methods were used to evaluate the accuracy of the SFST battery to discriminate at the BACs of interest: comparison of means, correlation analyses, and decision analyses.

COMPARISON OF MEANS

Table 2 presents a summary of the estimated and measured BAC data by age category. The table shows that 91.9 percent of the motorists tested were adults, compared to 8.1 percent youth, defined as motorists under the age of 21 years. The mean estimated and measured BACs of the younger motorists were approximately 0.035 lower than the BACs of the adults tested during the field study. The officers' mean estimated BACs, however, were very close to the mean measured BACs for both adults and youth; on average, the difference between officers' estimates and the actual BACs were only 0.005 percent for adults and 0.007 percent for youth.

TABLE 2
ESTIMATED AND MEASURED BAC (%) BY AGE CATEGORY

Age Category	Number	Percent	Estimated BAC (Mean)	Measured BAC (Mean)
Adults	273	91.9	0.120	0.125
Youth	24	8.1	0.083	0.090
Total	297	100.0	**0.117**	**0.122**

Table 3 presents a summary of the estimated and measured BAC data by gender category. The table shows that 87.9 percent of the motorists tested were males, compared to 12.1 percent females, with adults and youth combined. The mean estimated BACs of the male and female motorists tested were identical (i.e., 0.117 percent). Again, for both categories, the officers' mean estimated BACs were very close to the mean measured BACs; on average, the difference between officers' estimates and the actual BACs were only 0.004 percent for males and 0.012 percent for females.

TABLE 3
ESTIMATED AND MEASURED BAC (%) BY GENDER

Gender	Number	Percent	Estimated BAC (Mean)	Measured BAC (Mean)
Male	261	87.9	0.117	0.121
Female	36	12.1	0.117	0.129
Total	297	100.0	**0.117**	**0.122**

Table 4 presents a more detailed accounting of the estimated and measured BAC data by age and gender category, and by the disposition of the enforcement stop. In addition, the table shows that 73 percent of all motorists who were tested during the field study were arrested for DWI based on SFST performance and officer evaluations. Approximately 22 percent of the motorists tested received warnings and five percent were cited for a motor vehicle violation other than DWI.

TABLE 4
ESTIMATED AND MEASURED BAC (%) BY DISPOSITION, AGE CATEGORY, AND GENDER

Disposition & Category	Number	Percent	Estimated BAC (Mean)	Measured BAC (Mean)
Warnings	**65**	**21.9**	**0.060**	**0.044**
Adults	57		0.063	0.045
Male Adults	53		0.063	0.044
Female Adults	4		0.070	0.054
Youth	8		0.036	0.038
Male Youth	6		0.037	0.038
Female Youth	2		0.035	0.040
Citations	**15**	**5.1**	**0.055**	**0.046**
Adults	11		0.050	0.040
Male Adults	9		0.047	0.043
Female Adults	2		0.065	0.029
Youth	4		0.070	0.062
Male Youth	2		0.060	0.055
Female Youth	2		0.080	0.070
Arrests	**217**	**73.0**	**0.138**	**0.150**
Adults	205		0.139	0.152
Male Adults	180		0.139	0.150
Female Adults	25		0.139	0.160
Youth	12		0.119	0.135
Male Youth	11		0.121	0.134
Female Youth	1		0.100	0.140
Total	**297**	**100.0**	**0.117**	**0.122**

The data presented in Table 4 also show that officers tended to slightly over-estimate the BACs of motorists who had lower BACs, and slightly under-estimate BACs at the higher levels. Overall, however, officers' estimates were extremely accurate. Based on SFST results and officers' observations, the officers' mean estimated BAC of the 297 motorists was 0.117 percent, compared to the mean measured BAC of 0.122. Although statistically significant, the difference of 0.005 percent BAC is a trivial and operationally irrelevant under-estimate of actual BACs that is within the margin of error of sophisticated evidentiary testing equipment.

CORRELATION ANALYSES

The accuracy of the SFSTs was further evaluated by conducting a series of correlation analyses to identify the degree to which officers' individual estimates of BAC corresponded with subjects' actual, or measured, BAC. A correlation coefficient is a statistic, usually represented as *r*, that expresses the relatedness of two variables, that is, the degree to which the variables co-vary. In this case, the two variables were an officer's estimate and the subject's actual BAC. The Pearson product-moment correlation method was used to calculate the relationship between these variables; cases with complete SFST results (n=261) were used in this analysis.

If officers had predicted the precise BACs of all subjects (to three decimal points), the correlation coefficient would be +1.00; the correlation coefficient would be zero if there were no relationship between the estimated and actual BACs. For predictive measures, especially those administered under field conditions, a correlation of 0.65 to 0.70 is considered to be very high.

Table 5 presents the results of the correlation analyses. The table shows that HGN test results had the highest correlation with measured BAC of the three components of the SFST battery (*r*=0.65). However, a slightly higher correlation was obtained when the results of the three component tests were combined (*r*=0.69). The table also shows strong correlations between test results and officers' estimated BACs, indicating that officers were following procedures and interpreting test results correctly. All of the correlations were found to be statistically significant (p=.005).

TABLE 5
CORRELATIONS OF SFST SCORES TO ESTIMATED AND MEASURED BAC (%)
N=261 CASES WITH COMPLETE SFST SCORES

Rank	SFST(s)	Correlation (*r*) with Estimated BAC	Correlation (*r*) with Measured BAC
1	3 Tests Combined	0.75	0.69
2	HGN	0.71	0.65
3	Walk-and-Turn	0.64	0.61
4	One Leg Stand	0.61	0.45

DECISION ANALYSES

The third method used to evaluate the accuracy of the SFST battery was to construct a decision matrix that describes the four possible combinations of the two variables of interest, estimated and actual BACs above and below the levels of interest. Figure 4 presents the first decision matrix, with the four major cells of the matrix representing the four possible decisions at 0.08 percent BAC. The numbers in the major cells are the number of cases for each type of decision out of the 297 SFST administrations. The two shaded cells represent correct decisions based on SFST results: 1) 210 motorists who officers estimated to have BACs equal to or greater than 0.08 percent, who later were found to have BACs ≥0.08 by BAC testing (by breath, blood, or urine analysis); and, 2) 59 motorists who officers estimated to have BACs below 0.08 percent, who later tested below 0.08.

Figure 4 also reveals the incorrect decisions: 1) 24 motorists who officers estimated to have BACs greater than 0.08 who later were found to have BACs below that level (false positives); and, 2) four subjects who officers estimated to have BACs below 0.08 who later tested above 0.08 (false negatives).

It can be calculated from the data contained in Figure 4 that officers' decisions were accurate in 91 percent of the 297 cases (i.e., [210+59]÷297=.906). Further, officers' decisions to arrest were correct in 90 percent of the cases in which BAC was estimated to be ≥0.08 (i.e., 210÷234=.897), and decisions not to arrest were correct in 94 percent of the cases in which BAC was estimated to be below 0.08 (i.e., 59÷63=.937). These results indicate a high degree of accuracy, but it will be instructive to consider more closely those cases in which incorrect decisions were made.

		Officers' Estimated BACs		
		<0.08%	≥0.08%	
Measured BACs	≥0.08%	n=4	**n=210**	n=214
	<0.08%	**n=59**	n=24	n=83
		n=63	n=234	**N=297**

Accurate in 91% of cases overall
90% accurate in "yes" decisions
94% accurate in "no" decisions

Figure 4. Decision matrix at 0.08 percent BAC.

Table 6 presents a summary of the data for each of the 24 false positives (FPs). These cases are labeled False Positives because the officers estimated the subjects' BACs to be ≥0.08 percent, but subsequent testing found BACs below 0.08. However, in several cases, officers were correct in identifying impairment, which probably influenced their estimates of BAC.

TABLE 6
SUMMARY OF FALSE POSITIVES

	Case Number	Estimated BAC (%)	Number of HGN Clues	Measured BAC (%)	Is Estimate Consistent with Clues?
1	30	0.08	4	0.050	yes
2	34	0.08	4	0.058	yes
3	121	0.08	6	0.060	yes
4	186	0.08	4	0.063	yes
5	226	0.08	6	0.058	yes
6	227	0.08	4	0.060	yes
7	129	0.09	4	**0.070**	yes
8	175	0.09	4	**0.070**	yes
9	32	0.09	6	**0.076**	yes
10	127	0.09	6	0.028	yes
11	224	0.10	4	**0.070**	yes
12	16	0.10	6	**0.070**	yes
13	196	0.10	6	**0.074**	yes
14	52	0.11	4	0.050	yes
15	178	0.12	6	**0.070**	yes
16	246	0.12	6	**0.069**	yes
17	12	0.08	2	0.060	no
18	164	0.08	2	**0.070**	no
19	165	0.08	2	0.020	no
20	135	0.08	3	**0.078**	no
21	137	0.09	n / a	0.030	?
22	75	0.09	2	0.048	no
23	104	0.09	3	0.037	no
24	13	0.12	0	0.043	no

In 16 of the cases listed in Table 6, the officers' estimates of BAC were consistent with the number of HGN clues observed (i.e., four or more HGN clues to support an estimate ≥0.08), however, the motorists subsequently were found to have actual BACs below 0.08 percent. In seven of the cases, the officers' estimated BACs were inconsistent with the number of HGN clues observed. It is important to note that six of the 24 false positives had measured BACs of 0.07 percent, and three had BACs greater than 0.07 but less than 0.08 (i.e., 0.074, 0.076, and 0.078). All nine of these BACs are within the margin of error of the testing devices. Further, Case Number 16 was a juvenile (0.069), which rendered the difference between estimated and measured BACs irrelevant in a zero tolerance jurisdiction; that is, it was a correct arrest decision despite the BAC estimate. In addition, two of the subjects with measured BACs of 0.07 were arrested for DWI, because the officers' believed that they were too impaired to be permitted to drive. Finally, Case Number 30, with an estimated BAC of 0.08 and a measured BAC of 0.05 percent, was found to be a psychiatric patient, which helped to explain her erratic behavior, poor SFST performance, and apparent impairment.

Although the proportions of correct decisions presented in Figure 4 reflect a high degree of accuracy, the accuracy of officers' decisions is even better if some of the borderline cases are accepted. An accuracy rate of 94 percent for all officer decisions based on SFST results was calculated by including as correct decisions Case 16 (the youth with a 0.069 percent BAC) and the nine false positives with BACs between 0.07 and 0.08, discussed in the previous paragraph.

Table 7 summarizes the four cases in which officers estimated the subjects' BACs to be below 0.08 percent, but later found the measured BACs to be ≥0.08. Six HGN clues would be expected for Case Number 193 (0.10 percent) and Case Number 99 (0.12 percent). It is unknown why the officers observed only two HGN clues. In contrast, officers recorded four HGN clues for Case Number 131 and Case Number 114, which would indicate BACs greater than 0.08, however, the officers' estimated-BACs were only 0.06 percent. It is unknown why the officers did not follow the test interpretation guidelines in these two cases; their low estimates probably reflect other observations made in combination with SFST performance.

TABLE 7
SUMMARY OF FALSE NEGATIVES

	Case Number	Estimated BAC (%)	Number of HGN Clues	Measured BAC (%)	Is Estimate Consistent with Clues?
1	193	0.06	2	0.100	yes
2	99	0.06	2	0.120	yes
3	131	0.06	4	0.080	no
4	114	0.06	4	0.116	no

Similarly, in seven of the false positive cases listed previously in Table 6, officers apparently did not follow the test interpretation guidelines; that is, fewer than four HGN clues were reported, yet the officers' estimated-BACs were at least

0.08 percent. It is possible that other factors influenced the officers' estimates. For example, the subjects might have appeared to be more impaired than indicated by HGN results as a consequence of prescription or recreational drugs taken in addition to alcohol.

A series of decision analyses was performed to calculate the contributions of the component tests of the battery to officers' estimates of BAC. Figure 5 presents three decision matrices, one for each of the SFSTs. The matrices are similar to the one in Figure 4, but with the criterion numbers of clues at 0.08 percent BAC substituted for officers' estimates. Figure 5 shows the HGN test to be the most accurate independent predictor of whether a motorist's BAC is above or below 0.08 percent.

Number of HGN Clues

Measured BACs	< 4	≥ 4	
≥0.08%	n=4	**n=205**	n=209
<0.08%	**n=51**	n=30	n=81
	n=55	n=235	**N=290**

Accurate in 88% of cases overall
87% accurate in "yes" decisions
93% accurate in "no" decisions

Number of WAT Clues

Measured BACs	< 2	≥ 2	
≥0.08%	n=16	**n=179**	n=195
<0.08%	**n=36**	n=40	n=76
	n=52	n=219	**N=271**

Accurate in 79% of cases overall
82% accurate in "yes" decisions
69% accurate in "no" decisions

Number of OLS Clues

Measured BACs	< 2	≥ 2	
≥0.08%	n=16	**n=182**	n=198
<0.08%	**n=44**	n=31	n=75
	n=60	n=213	**N=273**

Accurate in 83% of cases overall
86% accurate in "yes" decisions
73% accurate in "no" decisions

Figure 5. Decision matrices at 0.08 percent BAC for each component test of the SFST battery.

Further analyses were performed to explore methods for combining the results of the three component tests. Only the 261 cases that included test results for all three component tests could be used in this analysis. Of those cases, 73 were found to have BACs below 0.08 percent and 188 cases had measured BACs ≥0.08 percent. In 162 of the 188 cases (86 percent), all three component SFSTs were unanimous in their predictions.

Figure 6 presents a Venn diagram that illustrates the contributions of the three tests to the 14 percent of cases in which a discrepancy occurred. The figure shows there were 162 cases with BACs ≥0.08 in which all three SFSTs indicated a BAC ≥0.08 (the number outside the circles in Figure 6), and 26 cases in which one or more test disagreed (the numbers inside the circles). A single test indicated a BAC below 0.08 in 17 of the cases (8+2+7), and two tests were involved in nine of the cases (1+1+7). There were no cases in which all three tests predicted incorrectly.

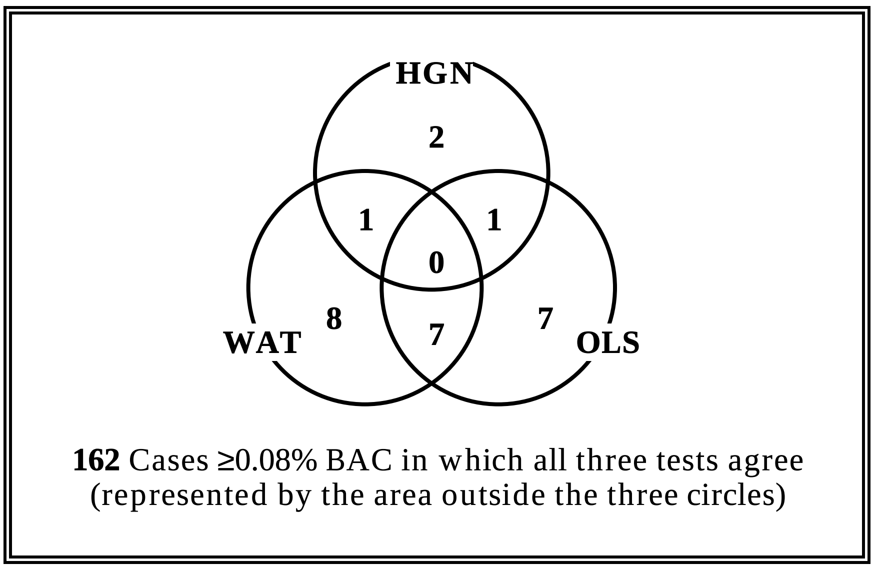


Figure 6. Venn diagram of 188 cases ≥0.08% BAC; 26 cases in which all three tests do not agree.

The horizontal gaze nystagmus test (HGN in the diagram) was about four times less likely to be the source of a discrepancy than the other two tests. Only two of the single-test discrepancies were attributable to HGN results, compared to eight cases for the Walk and Turn test (WAT), and seven cases for the One Leg Stand (OLS). Overall, the HGN test was involved in only four of the discrepancies, compared to 16 cases for the Walk and Turn and 15 cases for the One Leg Stand.

The question of the SFST battery's accuracy in discriminating BACs above and below 0.04 percent is addressed by the following decision matrix, presented in Figure 7; the shaded cells of the matrix again represent correct decisions based on SFST results. The figure shows that officers estimated motorists' BACs to be equal to or greater than 0.04 but under 0.08 percent in 54 cases, and in 51 of those cases their estimates were found to be correct by subsequent breath, blood, or urine testing;

these values result in an accuracy rate of 94 percent for these decisions (i.e., 51÷54=.94). The figure also shows that officers estimated that 29 motorists had BACs below 0.04, and in 15 of those cases their estimates were found to be correct by subsequent testing, resulting in a 52 percent accuracy rate (15÷29=.52). Overall, officers were accurate in 80 percent of the cases when discriminating between subjects who were above 0.04 but below 0.08 percent BAC (i.e., [51+15]÷83=.80).

		Officers' Estimated BACs		
		<0.04%	≥0.04 <0.08%	
Measured BACs	≥0.04 <0.08%	n=14	**n=51**	n=65
	<0.04%	**n=15**	n=3	n=18
		n=29	n=54	**N=83**

Accurate in 80% of cases overall
94% accurate in "yes" decisions
52% accurate in "no" decisions

Figure 7. Decision matrix at 0.04 percent BAC.

EVALUATION OF SFST ACCEPTABILITY

In interviews and during ride-along observations, the officers who participated in the study fully accepted the SFSTs for evaluating motorists for DWI at BACs below 0.10 percent. All of the officers were formally trained in SFST administration and scoring and all had sufficient field experience to develop confidence in their abilities to discriminate at the 0.08 level. Further, it was the officers' experience with the SFST battery that the component tests could be administered to all but a small proportion of drivers and under all reasonable environmental conditions.

Interviews also were conducted with representatives of the San Diego City Attorney's Office to inquire concerning the acceptability of the SFSTs to prosecutors and judges in DWI cases. The attorneys interviewed reported that none of the 298 DWI arrests made by participating officers during the study period was negatively affected by the SFST battery, or by excluding the other tests that traditionally had been used by the department.

The attorneys further explained that as prosecutors they normally prefer as much evidence as possible, and in a DWI case more tests usually generate more evidence they can use. However, it has been their recent experience that a test used by another local law enforcement agency has negatively affected cases they have prosecuted. Defense attorneys have been unsuccessful in their challenges of NHTSA's SFST battery, but they have successfully challenged the validity of the other test because it has not been evaluated in a systematic and scientific manner. Prosecutors who were interviewed suggested that the optimum situation would be for all law enforcement agencies to restrict their field sobriety evaluations to the same standardized battery of three tests.

IMPLICATIONS

The research documented in this report found that NHTSA's Standardized Field Sobriety Test Battery accurately and reliably assists officers in making DWI arrest decisions at 0.08 percent BAC. The study also found that the SFSTs can be used to assist officers in making arrest decisions at 0.04 percent BAC by using two HGN clues as the criterion rather than four clues, which is the criterion for a 0.08 percent or above BAC determination. The primary implication of the study results is that the SFST battery is a valid method for making roadside DWI decisions at 0.08 and 0.04 percent BAC. Specific implications of the study results are presented in the following paragraphs in response to the research questions listed previously.

HOW ACCURATELY DO THE TESTS DISCRIMINATE BETWEEN SUBJECTS WHO ARE ABOVE OR BELOW 0.08 AND 0.04 PERCENT BACS?

This study found NHTSA's SFST battery to be an accurate method for discriminating motorists' BACs above and below 0.08 percent and above and below 0.04 percent, when the tests are conducted by trained officers, as summarized below.

COMPARISON OF MEANS

The mean estimated BAC of the 297 motorists included in the study was 0.117 percent, compared to the mean measured BAC of 0.122. The difference of 0.005 percent BAC (i.e., five one-thousandths of a percent BAC) is very small and operationally irrelevant. The accuracy of officers' estimates during this study, in large measure, confirms the anecdotal accounts and observations of officers in the field that suggest remarkable abilities to predict a motorists' BAC on the basis of SFST results.

CORRELATION ANALYSES

Correlation analyses found the HGN test to be very predictive of measured BACs (r=0.65). A higher correlation was obtained when the results of the three component tests were combined (r=0.69). All of the correlations are statistically significant, meaningful, and in the rank order expected from previous SFST research.

DECISION ANALYSES

Decision analyses found that officers' estimates of whether a motorist's BAC was above or below 0.08 or 0.04 percent were extremely accurate. Estimates at or above the 0.08 level were accurate in 91 percent of the cases, or as high as 94 percent if explanations for ten of the false positives are accepted. Estimates at or above the 0.04 level (but below 0.08) were accurate in 94 percent of the relevant cases. It is important to note that officers' decisions not to arrest were more accurate at 0.08 than at 0.04 (94 percent compared to 52 percent).

Although the relatively small number of low BACs in the data base (n=83) might constrain confidence in the SFSTs at the 0.04 level, the data strongly suggest operational utility to accurately discriminate above or below 0.04 percent BAC. Further, these results are consistent with the results of a recent study conducted to evaluate the SFST battery for use by officers in Colorado.

Colorado has a two-tier statute that permits officers to arrest motorists for driving under the influence (DUI) if found to have a BAC ≥ 0.10 percent, and for a lesser offense, driving while ability impaired (DWAI), if found to have a BAC ≥0.05 but below 0.099 percent. Of the 234 drivers tested during the Colorado study for whom BACs were known, 93 percent of the officers' decisions to arrest at the 0.05 percent criterion were correct, and 64 percent of the decisions to release were correct. Overall in the Colorado study, 86 percent of the officers' decisions at the 0.05 level were correct, based on SFST results (Burns and Anderson, 1995; Anderson and Burns, 1997).

WHICH OF THE COMPONENTS OF THE SFST BATTERY IS/ARE THE BEST PREDICTOR(S) OF BAC?

The horizontal gaze nystagmus test was found to be the most predictive of the three component tests, but correlations with measured BACs were higher when the results of all three tests were combined, as reported earlier. The implications of this study result are that all components of the SFST battery should be administered when possible or practical. However, the data indicate that the HGN test alone can provide valid indications to support officers' arrest decisions at both 0.08 and 0.04 percent BAC.

HOW RELIABLE, OR CONSISTENT, ARE THE TESTS?

Reliability is a measurement concept that represents the consistency with which a test measures a type of performance or behavior. In the current context, a reliable field sobriety test provides consistent results when administered to the same individual by two different officers, under nearly identical conditions. This type of "inter-rater" reliability was impossible to measure directly during this study, due to the constraints imposed by field conditions. In particular, it would have been unrealistic to subject motorists to the SFST battery twice, or to require that officers operate in pairs during their patrols.

Evidence of SFST reliability can be found in the results of the previous laboratory studies, in which the constraints on repeated measure were eliminated by the use of paid subjects and officers. Tharp, Burns, and Moskowitz (1981) found relatively high inter-rater reliability for BAC estimates based on SFST results (r=.72). The researchers also found that inter-rater reliability increased in subsequent sessions (r=.80), indicating the important role of training and experience in achieving accuracy, reliability, and overall proficiency.

In addition, correlation coefficients, in general, are measures of reliability. For this reason, the correlations between estimated and actual BACs obtained during the field study (r=.69) indicate a high degree of reliability for tests designed to be administered at roadside.

ARE THE TESTS USABLE BY POLICE OFFICERS UNDER A VARIETY OF ROADSIDE CONDITIONS? ARE THEY READILY ACCEPTED BY OFFICERS AND PROSECUTORS?

All of the officers who participated in this study were members of the San Diego Police Department's alcohol enforcement unit, all had previously received NHTSA-approved training in DWI detection and SFST administration, and all had at least three years of experience in the Traffic Division before joining the special unit. Prior to beginning the field study, the officers demonstrated competence in the administration of the component tests and interpretation of test results. Participation was limited to members of the alcohol-enforcement unit of a single law enforcement agency. These experience and training requirements were imposed, to control variables, to the extent possible, that might affect study results.

As a consequence of the selection criteria, all participating officers were proficient in the use of the SFST battery. The officers reported that they use their SFST skills daily in their work, and their experience has made them confident in the ability of the test battery to discriminate at 0.08 percent BAC, and at lower levels. Further, officers reported that the tests can be administered in all reasonable environmental conditions. In short, the officers who participated in this study consider the SFST battery to be extremely useful, in fact, essential tools for the performance of their professional duties.

The prosecutors interviewed during the study reported that the SFST battery has been acceptable to them and the courts because it was developed and validated in a systematic and scientific manner. They suggested that all law enforcement agencies should limit officers to use of the SFST battery in performance evaluations of DWI because other tests usually lack credibility in court. No problems were experienced in any of the 298 cases resulting from the field study, indicating the SFSTs to be fully acceptable to the courts in establishing probable cause to arrest a motorist for DWI.

NOTE ABOUT THE ACCEPTABILITY OF THE HGN TEST

Many law enforcement officers from across the United States have reported their sincere appreciation to NHTSA for developing the SFST battery, and in particular, the horizontal gaze nystagmus test. However, some officers have expressed frustration about the resistance of some courts to accept HGN results, despite the clear and unequivocal support of scientific research and field experience. It is likely that this remaining resistance to the horizontal gaze nystagmus test is attributable to a misunderstanding concerning the purpose of a field sobriety test, and can be explained by reference to "face validity," a term used in the behavioral sciences to describe one component of a measure's acceptability.

Many individuals, including some judges, believe that the purpose of a field sobriety test is to measure driving impairment. For this reason, they tend to expect tests to possess "face validity," that is, tests that appear to be related to actual driving tasks. Tests of physical and cognitive abilities, such as balance, reaction time, and information processing, have face validity, to varying degrees, based on the involvement of these abilities in driving tasks; that is, the tests seem to be relevant "on the face of it." Horizontal gaze nystagmus lacks face validity because it does not appear to be linked to the requirements of driving a motor vehicle. The reasoning is correct, but it is based on the incorrect assumption that field sobriety tests are designed to measure driving impairment.

Driving a motor vehicle is a very complex activity that involves a wide variety of tasks and operator capabilities. It is unlikely that complex human performance, such as that required to safely drive an automobile, can be measured at roadside. The constraints imposed by roadside testing conditions were recognized by the developers of NHTSA's SFST battery. As a consequence, they pursued the development of tests that would provide statistically valid and reliable indications of a driver's BAC, rather than indications of driving impairment. The link between BAC and driving impairment is a separate issue, involving entirely different research methods. Those methods have found driving to be impaired at BACs as low as 0.02 percent, with a sharp increase in impairment at about 0.07 percent (Moskowitz and Robinson, 1988; Stuster, 1997). Thus, SFST results help officers to make accurate DWI arrest decisions even though SFSTs do not *directly* measure driving impairment.

Horizontal gaze nystagmus is the most accurate diagnostic of BAC available to officers in the field. HGN's apparent lack of face validity to driving tasks is irrelevant because the objective of the test is to discriminate between drivers above and below the statutory BAC limit, not to measure driving impairment. Throughout the United States, DWI laws permit arrest decisions to be made on the basis of the statutory BAC limit, irrespective of a specific motorist's degree of impairment. Motorists also can be arrested at BACs *below* the statutory limit if their driving performance is demonstrably impaired by alcohol or other drugs.

CONCLUSIONS

The results of this study provide clear evidence of the validity of the Standardized Field Sobriety Test Battery to discriminate above or below 0.08 percent BAC. Further, study results strongly suggest that the SFSTs also accurately discriminate above or below 0.04 percent BAC.

Finally, in addition to establishing the validity of the SFST battery, this study has found the tests to be acceptable, indeed welcomed, by law enforcement officers and DWI prosecutors.

REFERENCES

Anderson, E.W. and Burns, M. (1997). Standardized Field Sobriety Tests: A Field Study. *Proceedings of the 14th International Conference on Alcohol, Drugs and Traffic Safety Volume 2*, 635-639.

Aschan, G. (1958). Different types of alcohol nystagmus. *Acta Otolaryngology, Supplement 140*, 69-78.

Burns, M. and Anderson, E.W. (1995). A Colorado Validation Study of the *Standardized Field Sobriety Test (SFST) Battery*. Colorado Department of Transportation.

Burns, M. and Moskowitz, H. (1977). *Psychophysical Tests for DWI Arrest*. U.S. Department of Transportation, National Highway Traffic Safety Administration Final Report DOT-HS-5-01242, Washington, D.C.

Harris, D.H., Dick, R.A., Casey, S.M.,and Jarosz, C.J. (1980). *The Visual Detection of Driving While Intoxicated*. U.S. Department of Transportation, National Highway Traffic Safety Administration Final Report DOT-HS-7-1538.

Harris, D.H. (1980). Visual detection of driving while intoxicated. *Human Factors, 22*(6), 725-732.

Lehti, H.M.J. (1976). The effects of blood alcohol concentration on the onset of gaze nystagmus. *Blutalkohol*, Vol. 13, 411-414.

Moskowitz, H., and Robinson, C.D. (1988). *Effects of Low Doses of Alcohol on Driving-Related Skills: A Review of the Evidence*. U.S. Department of Transportation, National Highway Traffic Safety Administration, DOT-HS-807-280, Washington, D.C.

Pentilla, A., Tenhu, M., and Kataja, M. (1971). *Clinical Examination For Intoxication In Cases of Suspected Drunken Driving*. Statistical and Research Bureau of TALJA. Iso Roobertinkatu 20, Helsinki, Finland.

Stuster, J.W. (1997). *The Detection of DWI at BACs Below 0.10*. U.S. Department of Transportation, National Highway Traffic Safety Administration Final Report (in press).

Stuster, J.W. (1993). *The Detection of DWI Motorcyclists*. U.S. Department of Transportation, National Highway Traffic Safety Administration Final Report DOT-HS-807-839.

Tharp, V., Burns, M., and Moskowitz, H. (1981). *Development and Field Test of Psychophysical Tests for DWI Arrest*. U.S. Department of Transportation, National Highway Traffic Safety Administration Final Report DOT-HS-805-864, Washington, D.C.

Wilkinson, I.M.S., Kime, R., and Purnell, M. (1974). Alcohol and human eye movement. *Brain, 97,* 785-792.

APPENDIX A

STANDARDIZED FIELD SOBRIETY TESTING

STANDARDIZED FIELD SOBRIETY TESTING

The Standardized Field Sobriety Test (SFST) is a battery of three tests administered and evaluated in a standardized manner to obtain validated indicators of impairment and establish probable cause for arrest. These tests were developed as a result of research sponsored by the National Highway Traffic Safety Administration (NHTSA) and conducted by the Southern California Research Institute. A formal program of training was developed and is available through NHTSA to help police officers become more skillful at detecting DWI suspects, describing the behavior of these suspects, and presenting effective testimony in court. Formal administration and accreditation of the program is provided through the International Association of Chiefs of Police (IACP). The three tests of the SFST are:

- Horizontal gaze nystagmus (HGN),
- Walk-and-turn, and
- One-leg stand.

These tests are administered systematically and are evaluated according to measured responses of the suspect.

HGN TESTING

Horizontal gaze nystagmus is an involuntary jerking of the eye which occurs naturally as the eyes gaze to the side. Under normal circumstances, nystagmus occurs when the eyes are rotated at high peripheral angles. However, when a person is impaired by alcohol, nystagmus is exaggerated and may occur at lesser angles. An alcohol-impaired person will also often have difficulty smoothly tracking a moving object. In the HGN test, the officer observes the eyes of a suspect as the suspect follows a slowly moving object such as a pen or small flashlight, horizontally with his or her eyes. The examiner looks for three indicators of impairment in each eye: if the eye cannot follow a moving object smoothly, if jerking is distinct when the eye is at maximum deviation, and if the angle of onset of jerking is within 45 degrees of center. If, between the two eyes, four or more clues appear, the suspect likely has a BAC of 0.10 or greater. NHTSA research indicates that this test allows proper classification of approximately 77 percent of suspects. HGN may also indicate consumption of seizure medications, phencyclidine, a variety of inhalants, barbiturates, and other depressants.

WALK AND TURN

The walk-and-turn test and one-leg stand test are “divided attention” tests that are easily performed by most unimpaired people. They require a suspect to listen to and follow instructions while performing simple physical movements. Impaired persons have difficulty with tasks requiring their attention to be divided between simple mental and physical exercises.

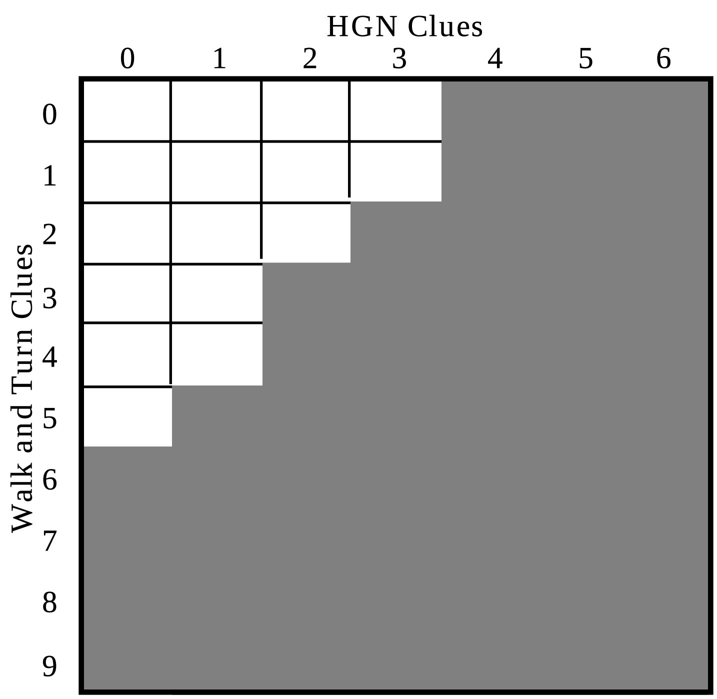
In the walk-and-turn test, the subject is directed to take nine steps, heel-to-toe, along a straight line. After taking the steps, the suspect must turn on one foot and return in the same manner in the opposite direction. The examiner looks for eight indicators of impairment: if the suspect cannot keep balance while listening to the instructions, begins before the instructions are finished, stops while walking to regain balance, does not touch heel-to-toe, steps off the line, uses arms to balance, makes an improper turn, or takes an incorrect number of steps. NHTSA research indicates that 68 percent of individuals who exhibit two or more indicators in the performance of the test will have a BAC of 0.10 or greater.

ONE LEG STAND

In the one-leg stand test, the suspect is instructed to stand with one foot approximately six inches off the ground and count aloud by thousands (One thousand-one, one thousand-two, etc.) until told to put the foot down. The officer times the subject for 30 seconds. The officer looks for four indicators of impairment, including swaying while balancing, using arms to balance, hopping to maintain balance, and putting the foot down. NHTSA research indicates that 65 percent of individuals who exhibit two or more such indicators in the performance of the test will have a BAC of 0.10 of greater.

COMBINED MEASURES

NHTSA's SFST training materials instruct officers in the use of the following decision table for combining the results of the HGN and Walk and Turn test.



Along the top of the table, circle the number of the subject's HGN clues. Along the left side of the table, circle the number of the subject's Walk and Turn clues. Draw a line down from the number of HGN clues and a line across from the number of Walk and Turn clues. If the intersection is within the shaded area, the subject has a BAC ≥0.10 percent.

DWI INVESTIGATION FIELD NOTES

I. 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____________ CRASH 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 ____

____

GENERAL OBSERVATIONS

SPEECH ____

ATTITUDE ____

CLOTHING ____

PHYSICAL DEFECTS / DRUGS OR MEDICATIONS USED________________________

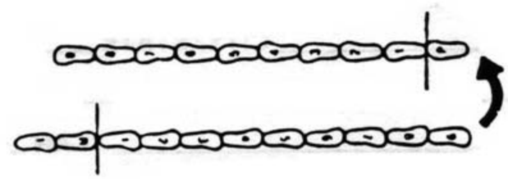
IV. PRE-ARREST SCREENING

HORIZONTAL GAZE NYSTAGMUS

				LEFT	RIGHT
Equal Pupils	☐ Yes ☐ No	✪	LACK OF SMOOTH PURSUIT		
Equal Tracking	☐ Yes ☐ No	✪	DISTINCT AND SUSTAINED NYSTAGMUS AT MAXIMUM DEVIATION		
Vertical Nystagmus	☐ Yes ☐ No	✪	ONSET OF NYSTAGMUS PRIOR TO 45 DEGREES		

Other (i.e., Resting Nystagmus)____

WALK AND TURN



INSTRUCTIONS STAGE

CANNOT KEEP BALANCE	
STARTS TOO SOON	

WALKING STAGE

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

IMPROPER TURN (Describe) ____

CANNOT DO TEST (EXPLAIN) ____

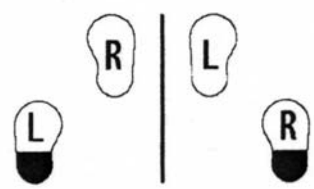
____

OTHER: ____

____

ONE LEG STAND

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



Type of Footwear

CANNOT DO TEST (EXPLAIN) ____

____

OTHER: ____

____

OTHER FIELD SOBRIETY TESTS

NAME OF TEST ____

DESCRIBE PERFORMANCE____

____

NAME OF TEST ____

DESCRIBE PERFORMANCE____

____

NAME OF TEST ____

DESCRIBE PERFORMANCE____

____

PBT (1) (optional) Time:__________ Results:__________	PBT (2) (optional) Time:__________ Results:__________

SESSION IX

TEST BATTERY DEMONSTRATIONS

SESSION IX

TEST BATTERY DEMONSTRATIONS

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

- o 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 Demonstration	o Participant Demonstration
	o Video 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.

SESSION X

"DRY RUN" PRACTICE SESSION

SESSION X

"DRY RUN" PRACTICE SESSION

Upon successfully completing this session, the participant 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. Live Administration of SFST Battery	o Instructor-Led Demonstration
C. Hands On Practice	o Participant Practice Session

"DRY RUN" PRACTICE SESSION

In this session, you will work with other participants, 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.

PARTICIPANT PERFORMANCE CHECKLIST

STANDARDIZED FIELD SOBRIETY TEST BATTERY

Student Name: ______________________________ Date: ________________

I. HORIZONTAL GAZE NYSTAGMUS

_____1. Have subject remove glasses if worn.

_____2. Stimulus held in proper position (approximately 12"-15" from nose, slightly above eye level).

_____3. Check for equal pupil size and resting nystagmus.

_____4. Check for equal tracking.

_____5. Smooth movement from center of nose to maximum deviation in approximately 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 a minimum of four seconds (no white showing). Check left eye, then right eye. (Repeat)

_____7. Eye moved slowly (approximately 4 sec.) from center to 45 angle. Check left eye, then right eye. (Repeat)

_____8. Check for Vertical Gaze 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 parallel to the ground, and gives demonstration.

_____5. Tells subject to keep both legs straight and to look at elevated foot.

_____6. Tells subject to count by thousands in the following manner: one thousand and one, one thousand and two, one thousand and three, 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 participant 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. Hands-on Practice	o Participant 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 participants to administer Standardized Field Sobriety Tests to volunteers who have consumed alcoholic beverages. Some of these volunteers will have BACs above 0.08. Others will be below that level. You will carefully note and record the volunteers' performance, and attempt to distinguish those above 0.08 from those below 0.08.

You will also learn to record your observations on a SFST Field Arrest Log.

SFST FIELD ARREST LOG

Date	Name	HGN	WAT	OLS	BAC +/- .08	Arrest Not Arrest	Measured BAC	Remarks

ATTACHMENT(S)

DWI INVESTIGATION FIELD NOTES

I. 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______________ CRASH 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 ____

____

GENERAL OBSERVATIONS

SPEECH ____

ATTITUDE ____

CLOTHING ____

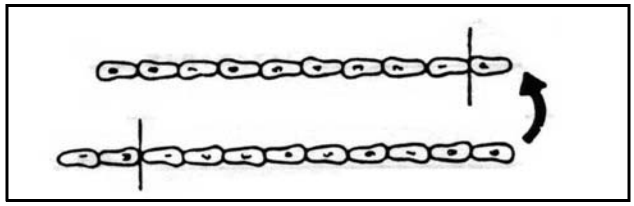
PHYSICAL DEFECTS / DRUGS OR MEDICATIONS USED______________________________

IV. PRE-ARREST SCREENING

HORIZONTAL GAZE NYSTAGMUS

				LEFT	RIGHT
Equal Pupils	☐ Yes ☐ No	✪	LACK OF SMOOTH PURSUIT		
Equal Tracking	☐ Yes ☐ No	✪	DISTINCT AND SUSTAINED NYSTAGMUS AT MAXIMUM DEVIATION		
Vertical Nystagmus	☐ Yes ☐ No	✪	ONSET OF NYSTAGMUS PRIOR TO 45 DEGREES		

Other (i.e., Resting Nystagmus)____



WALK AND TURN

INSTRUCTIONS STAGE

CANNOT KEEP BALANCE	
STARTS TOO SOON	

WALKING STAGE

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

IMPROPER TURN (Describe) ______________________________

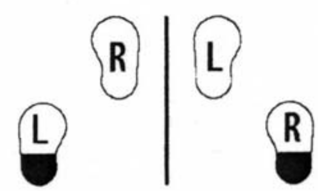
CANNOT DO TEST (EXPLAIN) ______________________________

____

OTHER: ______________________________

____

ONE LEG STAND



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

Type of Footwear

CANNOT DO TEST (EXPLAIN) ______________________________

____

OTHER: ______________________________

____

OTHER FIELD SOBRIETY TESTS

NAME OF TEST ______________________________

DESCRIBE PERFORMANCE______________________________

____

NAME OF TEST ______________________________

DESCRIBE PERFORMANCE______________________________

____

NAME OF TEST ______________________________

DESCRIBE PERFORMANCE______________________________

____

PBT (1) (optional) Time:__________ Results:__________

PBT (2) (optional) Time:__________ Results:__________

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 participant will be able to:

- o Properly administer the SFST's.
- o Properly observe and record subject's performance utilizing the standard note taking 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 Participant 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 participants in observing video-taped volunteers who have consumed alcoholic beverages. Some of these volunteers will have BACs above 0.08. Others will be below that level. You will carefully note and record the volunteers' performance, and attempt to distinguish those "0.08 and above" from those "below 0.08".

You will also learn to record your observations on a SFST Field Arrest Log. IACP/NHTSA strongly recommends that participants attending OPTION ONE OR OPTION TWO OF THIS TRAINING maintain a SFST Field Arrest Log.

SFST FIELD ARREST LOG

Date	Name	HGN	WAT	OLS	BAC +/- .08	Arrest Not Arrest	Measured BAC	Remarks

HANDOUT(S)

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 participant will be able to:

- o Discuss the importance of correct processing and report writing procedures in DWI arrests.
- o Discuss the correct sequence of DWI suspect processing procedures.
- o Discuss the essential elements of the DWI arrest report.
- o 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 Presentations
C. Narrative DWI Arrest Report	o Interactive Discussion
D. Case Preparation and Pre-trial Conference	o Video Presentations
E. Guidelines for Direct Testimony	o Video Presentations

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? <u>Evidence</u> 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 actual 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 impaired.

b. That proper arrest procedures were followed.

c. That proper regard was given to suspect's rights.

d. That subsequent observation and interview 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.

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 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 impaired by alcohol and/or other 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:

- o 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.

- o 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.

- o 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.

- o 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 a crash 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.

- o Exit From Vehicle - Record your observations of the subject's exit from the vehicle and include any unusual actions taken by the subject.

- o Field Sobriety Tests - Describe the subject's actions when you administered the field sobriety tests. Be specific.

- o Arrest - Document the arrest decision and ensure that all elements of the violation have been accurately described.

- o 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.

- o Disposition of Passenger and/or Property - Ensure that passengers and property are properly cared for.

- o 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.

- Evidential Test - Document which test(s) were administered and by whom. Be sure to include the evidential test(s).

- Implied Consent/Miranda Warning - Document that the admonishments were given at the appropriate point in the investigation.

- Witness Statements - List all witnesses and attach copies of their statements.

- Notification of Offender's Attorney or Other Party - Document the time and result of subject's telephone call to an attorney or other party.

- Citation/Complaint - Document that the traffic citation/complaint was issued at the appropriate time if applicable.

- 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.

- 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

- Use field notes to document evidence.

- Accurately note statements and other observations.

- Review the case with other officers who witnessed the arrest or otherwise assisted you and write down relevant facts.

- Collect and preserve all physical evidence.

- Prepare all required documents and a narrative report.

- 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 strong/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 impaired by alcohol and/or other drugs. 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. Describe clearly 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 impairment is 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.

ATTACHMENT(S)

ATTACHMENT A

TRIAL TIPS & TECHNIQUES

Courtroom Decorum

1. TELL THE TRUTH. Honestly is the best policy. Telling the truth requires that a witness testify accurately as to what he knows. If you tell the truth and are accurate, you have nothing to fear on cross- examination.

2. Condense your professional resume on to a 3x5 card, which you bring to court with you each time you receive a subpoena. On it, include your P.O.S.T. certification date, classes taken as a law enforcement office, and other special awards or permits you have.

3. READ YOUR INCIDENT REPORT before you come to court. Go over the details in your mind so that you will have an independent recollection of the events of the arrest. DO NOT come to court and ask the prosecutor for a copy of your report. Do ask, prior to court, if you cannot locate a copy of your request.

4. Dress neatly and professionally; leave sunglasses, PR-24, flashlight and other cumbersome equipment in your car before coming into the courtroom, unless needed for a demonstration. Wear a coat and tie if you prefer.

5. Do not guess the answer to any question asked. It is OKAY to say "I don't know" or "I can't remember" in response to questions. Do no give the impression that you are guessing the answer by prefacing your response with "I think" or "I believe." If you do not know the answer, it is okay to look at your report and refresh your memory. Always give definitive, positive, sure answers.

6. Listen carefully to the question asked. Do not begin your answer until the prosecutor has finished asking the question. Be sure you understand the question before you attempt to give an answer. If necessary, ask that the question be repeated or rephrased if you do not understand it.

7. Take your time. Do not feel pressured to give a quick answer. After a question is asked, there may be an objection; allow this to happen. When you hear the work, "objection", stop testifying.

8. Answer the question that is asked, then stop. Do not volunteer information not asked for, or you will risk causing a mistrial, or even an immediate acquittal. DO explain an answer, if you feel your answer might appear ambiguous to the jury. You are always permitted to explain your answer. Tell the prosecutor prior to your testimony if there is anything you feel the prosecutor needs to know, but might not!

9. Be serious in the courthouse...Jurors are aware that criminal prosecutions are serious business.

10. Speak clearly and loudly enough so that you can be easily heard.

11. Look at the jury when testifying, even when the defense attorney asking the question is not standing near the box. Always talk to the jury, and maintain eye contact with them, even if it feels unnatural to you.

12. Always be courteous, even when the defense attorney is not. Control your temper, and never allow yourself to be drawn into an argument with that attorney. Remember, the best way to make a good impression with the jury is to appear courteous and professional. You were just doing your job during the arrest, and you do not have a personal stake in the case.

13. Testify in English. Do not say, "The perpetrator exited the vehicle" when in reality "the defendant got out of his car." The person on trial is never a "lady" or "gentlemen," but is always "the defendant." Do not use military times without clarifying the time in laymen's terms. Do not use call signals. It makes more sense to the jury when you speak the same language as they do.

14. It is permissible and desirable to discuss the case with the prosecutor before trial. A defense attorney may ask this question; tell the truth. Obviously, a prosecutor will try to discuss the case with the witnesses before trial; be straight forward in answering this question.

15. A defense attorney will always ask whether you have an independent recollection of the case. That is, aside from your police report or other notes, do you remember the event? Any fact that you remember about the stop and/or arrest of the defendant would be sufficient to answer this question positively.

Specific DUI Trial Recommendations

1. Never give the numerical alco-sensor reading of the defendant when asked by the prosecutor. However, if the defense attorney asks you for the NUMERICAL reading, give it to him/her. The prohibition of alco-sensor results of a defendant do not apply to witnesses, such as passengers in the car.

2. Always demonstrate how you conducted field sobriety evaluations. If the prosecutor forgets to ask you to come off the witness stand to demonstrate, suggest that it will aid your testimony. Be certain, however, that you can do in court all the evaluations you asked the defendant to perform the night of the arrest. If you cannot do them, the jury will not expect the defendant to have done them properly.

3. Know the reasons for giving field sobriety evaluations:
   - They are **divided attention test**, designed to detect when a person in impaired by alcohol and/or drugs.
   - They provide evidence of intoxication in case defendant refuses to take a state administered test under implied consent.
   - They prevent an arbitrary decision to arrest, and allow an Office to articulate the reasons for concluding a driver was DUI to someone not present at the scene.

4. You are not required to know, and in fact know nothing, about the Intoxilyzer 5000 or your jurisdiction breath test instrument, its internal workings or anything other than how to operate it and take a breath sample from a defendant. You are merely an operator of an instrument, and while you have been taught something about how the instrument works when you became certified as an operator, never testify to its internal workings, or the defense attorney will discredit you, and make you out to be a "thinks-he-knows-it-all" who really knows nothing.

   Do Not bring the Intoxilyzer 5000 Operator's manual to court, or the log, unless instructed to by the prosecutor. Discuss any subpoena to produce that you may receive with the prosecutor, before complying with the subpoena.

5. Be aware that the margin of error in the Intoxilyzer 5000 is not + or - .02. The .02 grams comes into play in that the State's breath test results are not admissible if the sequential breath tests differ by more than .020 grams. If the two breath samples differ by more than .02 grams then the Intoxilyzer 5000 will give you an error message and you can either wait 20 minutes and give the defendant another breath test or take the defendant for a blood test. Also, margin of error only applies to statistical sampling such as polling data used in political campaigns. It does not apply to scientific instruments such as the Intoxilyzer 5000. According to the manufacturer the precision of the instrument is a standard deviation of 0.003 BrAC or better and the accuracy is better than federal requirements, ± 3% or ± 003 BrAC, whichever is greater. Furthermore, the instrument has been approved by the Federal Department of Transportation.

6. If you get an "Invalid Sample" on the Intoxilyzer 5000 the instrument has detected residual mouth alcohol in the subject's breath. You must restart a twenty-minute waiting period and repeat the test or take the subject for a blood test. Remember to write the blood drawer's name on the police report! It is also a "best practice" to witness the blood draw yourself – this may allow the prosecutor not to have to call the hospital personnel as a witness.

7. When testifying about field sobriety evaluations remember to discuss the level of impairment of the defendant. Officers can testify to numerical scores on a field sobriety test, including HGN, and can testify to the level of impairment. For example you could say; "the defendant scored four out of a possible six clues on the HGN and four clues is considered impaired." Sieveking v. State, 220 Ga. App. 218 (1996). A police officer can state a defendant "failed" a field sobriety test. **However, see number 9 below!!!!!**

8. If you are NHTSA trained and testify as to the accuracy of the field sobriety tests, make sure you know the numbers and their significance. Considered independently, the Nystagmus test was 77% accurate, the Walk-and-Turn, 68% accurate, and the One-Leg Stand, 65% accurate in identifying subjects whose BAC were .10 or more. 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. The problem with numbers is that if you get confused, you can jeopardize a driving under the influence case. So follow the dictates of number 9 below.

   Be sure the officer is aware that NHTSA has done validation studies, and the SFST is considered very useful in determining whether or not a defendant is driving while intoxicated. The officer doesn't have to know the numbers, or care, because in *this* case, *this* defendant was impaired.

9. With a proper Motion In Limine from the prosecutor, you can testify only as to the observations you make on the field sobriety evaluations. You would therefore not testify about the numbers of clues or whether the defendant passed or failed any tests. Thus, you would ignore the advice given in numbers seven and eight above. It is very important that you discuss this option with the prosecutor in advance of trial. This avoids the NHTSA requirements of passing or failing a test based on the number of clues. You would only testify as to what you observed regarding the defendant's manifestations of intoxication and performance of the field sobriety evaluations.

Police Witnesses

Although police officers and other professionals peripherally involved with the criminal justice system should be by nature more cooperative and competent as witnesses, it is not wise to assume too much, particularly if you haven't had that person as a witness on prior occasions. Leave nothing to chance. It is safer to prepare these witnesses as any other civilian witness. Accomplish this by always being mindful of the same considerations listed above and cover everything, even the basics. Some frequently encountered pitfalls with these kinds of witnesses include: a) relying too much on notes and reports; b) arguing with defense counsel; c) appearing to be too invested in obtaining a conviction; d) offering unsolicited and improper conclusions and opinion testimony; e) being non-responsive to the point of adding gratuitous comments; f) using too much law enforcement jargon; g) being overly defensive when in error; h) relying on too much "we" type of testimony instead of telling what they did themselves, or testifying to what they usually do as opposed to what they actually did in this case.

DWI INCIDENT REPORT

Defendant:	Eryn Greenfield
Age:	31
Date of Birth:	10/03/70
Date of Arrest:	XX-XX-XX
Time of Arrest:	9:20 pm
CA - D.L. #:	CA 1234567

<u>First Observations</u>:

On XX-XX-XX at approximately 9:00 p.m., I was patrolling westbound on Reed Avenue at the intersection with Interstate-80 (fully marked CHP patrol vehicle #904534). I was stopped at the intersection preparing to make a left turn onto eastbound I-80. I observed a yellow Volkwagon (S/V) traveling down the eastbound I-80 exit ramp approaching the intersection with Reed Avenue. I noticed the S/V traveling with no headlights. Furthermore, I noticed the right tires of the S/V travel over the solid white fog line on the exit ramp by approximately 2 feet. The S/V made a brief stop at the intersection, then made a right turn onto eastbound Reed Avenue. I made a U-turn and followed the S/V. The S/V then made a wide right turn from Reed Avenue onto southbound Riverpoint Drive. An enforcement stop was initiated at which point the S/V began to pull to the right. At the point the right front tire of the S/V rubbed up onto the raised concrete curb that paralleled the roadway.

<u>Observations After The Stop</u>:

I approached the S/V on the passenger side and made contact with the driver (convertible-top down). I immediately noticed that the driver had red and watery eyes. I advised her of the reason for the stop and asked if her vehicle had any mechanical problems. She stated, “no.” I requested her driver’s license, registration, and insurance. The driver removed a stack of cards from her wallet, which was located in her purse on right front passenger seat. She began sifting through the stack of cards. I observed her clearly pass by her license and continue searching through the cards. Unable to locate her license on the first attempt, she started over at the top and located the license on the second attempt. She was identified as Eryn Greenfield by California driver’s license (#CA1234567). After handing me the license, she did not make an attempt to retrieve the other documents I had requested. I asked her again for the registration and insurance cards. She then retrieved them out of the glove compartment. I asked her how much alcohol she had consumed and she stated “a couple of beers about an hour ago.” I asked her what size and type of beer and she replied with 12oz. bottles of Heineken. I asked her if she felt the effects of the drinks and she stated, “No, I feel fine.” As she spoke, I noticed that her speech was slurred. I asked her to exit the vehicle and step to the side walk so I could administer several field sobriety tests to her (see field sobriety test section). As she exited the vehicle, she stepped around the front as instructed, then stumbled on the raised curb. I asked her several pre-field sobriety test questions of which she answered accordingly (see page 2 of face page). As I communicated with her, I smelled an odor of alcoholic beverage emitting from her breath.

Field Sobriety Tests:

This evaluation was performed on Riverpoint Drive, just south of Reed Avenue. The evaluation surface was smooth concrete. Lighting conditions consisted of patrol vehicle headlights, spotlights, overhead lights, streetlight, and my flashlight. No surface defects were noted or claimed.

Horizontal Gaze Nystagmus (explained):

I observed lack of smooth pursuit, distinct and sustained nystagmus at maximum deviation, and an onset of nystagmus prior to 45 degrees in both of Greenfield's eyes.

Walk and Turn (explained and demonstrated):

Instruction Stage: Lost balance (feet broke apart)

Walking Stage (1st Nine): Walked 10 steps (counted 10).
Raised left arm over 6 inches away from body to assist with balance (at steps 4-5).

Walking Stage (2nd Nine): Walked 10 steps (counted 9).
Raised left arm over 6 inches away from body to assist with balance (at steps 6-7).

Turn: Lost balance during turn.

One Leg Stand (explained and demonstrated):

Greenfield raised her left leg and began counting. She put her foot down on counts 1006 and 1009. As she was counting, she skipped 1017 (counting from 1016 to 1018). Used right arm for balance (6+ inches from body). She counted to 1019 after 30 seconds.

Arrest:

Based on the following information, I formed the opinion that Greenfield was driving under the influence of an alcoholic beverage:

- Driving at night with no headlights.
- Driving to the right of the solid white fog line on exit ramp.
- Making wide right turn from eastbound Reed Avenue to southbound Riverpoint Drive.
- Right tire rubbing against raised concrete curb after stop was initiated.
- My observed divided attention problems while retrieving her license/registration and insurance.
- Her red, watery eyes, and slurred speech.
- Her admissions to consuming alcoholic beverages.

- Stumbling over curb after exiting the vehicle.
- Odor of alcoholic beverage emitting from her breath.
- My observed signs of impairment as she performed the field sobriety tests.

I arrested Greenfield for driving under the influence of an alcoholic beverage at 9:20 p.m. Greenfield was given the proper chemical testing advisement. She chose a breath test and was transported to the breath testing facility. She provided two breath samples of 0.10 and 0.10 at 9:50 p.m. and 9:52 p.m. She was then booked along with her property.

Recommendations:

I recommend a copy of this report be forwarded to the district attorney's office for review and prosecution of Greenfield for driving under the influence and driving with a blood alcohol concentration at or above the legal state limit.

Vehicle Disposition:

Greenfield's vehicle was stored by Reliable Towing.

SESSION XIII

REPORT WRITING EXERCISE AND MOOT COURT

SESSION XIII

REPORT WRITING EXERCISE AND MOOT COURT

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

- o Discuss the required information on a narrative arrest report.
- o Successfully complete a narrative arrest report.
- o Discuss the need for competent courtroom testimony.
- o 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. Participant's 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 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.

ATTACHMENT(S)

DWI INVESTIGATION FIELD NOTES

I. 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__________ CRASH 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 ____

____

GENERAL OBSERVATIONS

SPEECH ____

ATTITUDE ____

CLOTHING ____

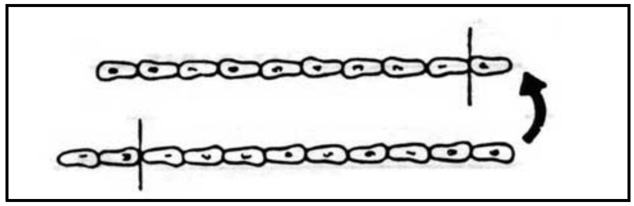
PHYSICAL DEFECTS / DRUGS OR MEDICATIONS USED________________________

IV. PRE-ARREST SCREENING

HORIZONTAL GAZE NYSTAGMUS

				LEFT	RIGHT
Equal Pupils	☐ Yes ☐ No	✪	LACK OF SMOOTH PURSUIT		
Equal Tracking	☐ Yes ☐ No	✪	DISTINCT AND SUSTAINED NYSTAGMUS AT MAXIMUM DEVIATION		
Vertical Nystagmus	☐ Yes ☐ No	✪	ONSET OF NYSTAGMUS PRIOR TO 45 DEGREES		
Other (i.e., Resting Nystagmus)________________________					

WALK AND TURN



INSTRUCTIONS STAGE

CANNOT KEEP BALANCE	
STARTS TOO SOON	

WALKING STAGE

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

IMPROPER TURN (Describe) ______________________________

CANNOT DO TEST (EXPLAIN) ______________________________

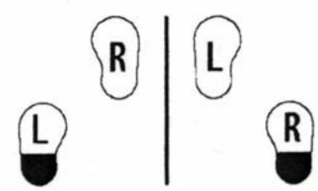
____

OTHER: ______________________________

____

ONE LEG STAND

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



Type of Footwear

CANNOT DO TEST (EXPLAIN) ______________________________

____

OTHER: ______________________________

____

OTHER FIELD SOBRIETY TESTS

NAME OF TEST ______________________________

DESCRIBE PERFORMANCE______________________________

____

NAME OF TEST ______________________________

DESCRIBE PERFORMANCE______________________________

____

NAME OF TEST ______________________________

DESCRIBE PERFORMANCE______________________________

____

PBT (1) (optional) Time:__________ Results:__________

PBT (2) (optional) Time:__________ Results:__________

SESSION XIV

"TESTING SUBJECTS" PRACTICE: SECOND SESSION

SESSION XIV

"TESTING SUBJECTS" PRACTICE: SECOND SESSION

Upon successfully completing this session, the participant 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.

CONTENT SEGMENTS	LEARNING ACTIVITIES
A. Procedures	o Instructor-Led Presentation
B. Hands-on Practice	o Participant 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 participants to administer Standardized Field Sobriety Tests to volunteers who have consumed alcoholic beverages. Some of these volunteers will have BACs above 0.08. Others will be below that level. You will carefully note and record the volunteers' performance, and attempt to distinguish those "0.08 and above" from those "below 0.08".

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. Have subject remove glasses if worn.

_____2. Stimulus held in proper position (approximately 12"-15" from nose, slightly above eye level).

_____3. Check for equal pupil size and resting nystagmus.

_____4. Check for equal tracking.

_____5. Smooth movement from center of nose to maximum deviation in approximately 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 a minimum of four seconds (no white showing). Check left eye, then right eye. (Repeat)

_____7. Eye moved slowly (approximately 4 sec.) from center to 45 angle. Check left eye, then right eye. (Repeat)

_____8. Check for Vertical Gaze 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 parallel to the ground and gives demonstration.

______5. Tells subject to keep both legs straight and to look at elevated foot.

______6. Tells subject to count by thousands in the following manner: one thousand and one, one thousand and two, one thousand and three, until told to stop, and gives demonstration.

______7. Checks actual time subject holds leg up.

Instructor: ____

ATTACHMENT(S)

DWI INVESTIGATION FIELD NOTES

I. 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__________ CRASH 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 ______________________________________

____

GENERAL OBSERVATIONS

SPEECH ______________________________________

ATTITUDE ______________________________________

CLOTHING ______________________________________

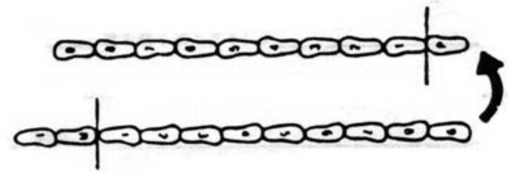
PHYSICAL DEFECTS / DRUGS OR MEDICATIONS USED______________________

IV. PRE-ARREST SCREENING

HORIZONTAL GAZE NYSTAGMUS

				LEFT	RIGHT
Equal Pupils	☐ Yes ☐ No	✪	LACK OF SMOOTH PURSUIT		
Equal Tracking	☐ Yes ☐ No	✪	DISTINCT AND SUSTAINED NYSTAGMUS AT MAXIMUM DEVIATION		
Vertical Nystagmus	☐ Yes ☐ No	✪	ONSET OF NYSTAGMUS PRIOR TO 45 DEGREES		
Other (i.e., Resting Nystagmus)______________________					

WALK AND TURN



INSTRUCTIONS STAGE

CANNOT KEEP BALANCE	
STARTS TOO SOON	

WALKING STAGE

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

IMPROPER TURN (Describe) ______________________________

CANNOT DO TEST (EXPLAIN) ______________________________

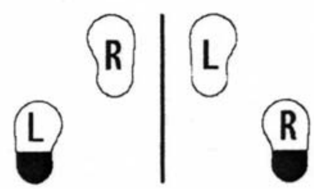
____

OTHER: ______________________________

____

ONE LEG STAND

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



Type of Footwear

CANNOT DO TEST (EXPLAIN) ______________________________

____

OTHER: ______________________________

____

OTHER FIELD SOBRIETY TESTS

NAME OF TEST ______________________________

DESCRIBE PERFORMANCE______________________________

____

NAME OF TEST ______________________________

DESCRIBE PERFORMANCE______________________________

____

NAME OF TEST ______________________________

DESCRIBE PERFORMANCE______________________________

____

PBT (1) (optional) Time:__________ Results:__________

PBT (2) (optional) Time:__________ Results:__________

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 participant 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 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 participants and viewing videoed volunteers who have consumed alcoholic beverages. Some of these volunteers will have BACs above 0.08. Others will be below that level. You will carefully note and record the volunteers' performance, and attempt to distinguish those "0.08 and above" from those "below 0.08".

You will record your results on the SFST Field Arrest Log. Participants trained using this option must continue to maintain this log following their training.

SFST FIELD ARREST LOG

Date	Name	HGN	WAT	OLS	BAC +/- .08	Arrest Not Arrest	Measured BAC	Remarks

SESSION XV

REVIEW AND PROFICIENCY EXAMINATIONS

SESSION XV

REVIEW AND PROFICIENCY EXAMINATIONS

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

- o Demonstrate knowledge and proficiency in administering the Standardized Field Sobriety Test battery.

CONTENT SEGMENTS	LEARNING ACTIVITIES
A. Review of Horizontal Gaze Nystagmus	o Instructor-Led Presentation
B. Review of Walk and Turn	o Instructor and Participant-Led Demonstration
C. Review of One-Leg Stand	o Instructor and Participant-Led Demonstration
D. Video Demonstration	o Video Demonstration
E. Proficiency Exam	o Participant 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 demonstrations.

Near the end of this session, you will be examined to determine proficiency in administering the three tests. Study the Participant's Performance Checklist. <u>You must perform each administrative step perfectly to pass the proficiency examination</u>.

ATTACHMENT(S)

Attachment A

PARTICIPANT PROFICIENCY EXAMINATION
STANDARDIZED FIELD SOBRIETY TEST BATTERY

Participant Name: ____ Date: __________

I. HORIZONTAL GAZE NYSTAGMUS

______1. Have Subject remove glasses if worn.

*_____2. Stimulus held in proper position (approximately 12"-15" from nose, just slightly above eye level).

______3. Check for equal pupil size and resting nystagmus.

______4. Check for equal tracking.

*_____5. Smooth movement from center of nose to maximum deviation in approximately 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 a minimum of 4 seconds (no white showing). Check left eye, then right eye. (Repeat)

*_____7. Eye moved slowly (approximately 4 seconds) from center to 45 angle. Check left eye, then right eye. (Repeat)

______8. Check for Vertical Gaze Nystagmus. (Repeat)

II. WALK-AND-TURN

______1. Instructions given from a safe position.

*_____2. Tells subject to place feet on a 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 on the line and demonstrates.

*_____5. Explains and demonstrates turning procedure.

*______6. Tells subject to return on the line taking nine heel-to-toe steps.

*______7. Tells subject to count steps out loud.

*______8. Tells subject to look at feet while walking.

*______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 parallel to the ground, and gives demonstration.

*______5. Tells subject to keep both legs straight and to look at elevated foot.

*______6. Tells subject to count out loud in the following manner: one thousand and one, one thousand and two, one thousand and three, until told to stop, and gives demonstration.

______7. Checks actual time subject holds leg up. (Time for 30 seconds.)

Instructor: ____

SESSION XVI

WRITTEN EXAMINATION AND PROGRAM CONCLUSION

SESSION XVI

WRITTEN EXAMINATION AND PROGRAM CONCLUSION

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

- o Complete a written examination with a passing grade.
- o Provide comments and suggestions for improving the course.

CONTENT SEGMENTS	LEARNING ACTIVITIES
A. Post Test	o Written Participant Examination
B. Critique	o Written Participant 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 <u>to prepare for the test</u>.

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 <u>following another too closely</u>. 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 0.08?

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.

INTRODUCTION TO DRUGGED DRIVING

PARTICIPANT'S MANUAL

HS 178A R2/06

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

A. Overview

B. Eye Examinations: Detecting Signs of Drug Influence

C. Drug Categories and Their Observable Effects

D. Combinations of Drugs

E. Demonstrations of Drug Influence (Video/DVD)

F. Dealing with Suspected Drug Influence or Medical Impairment

Learning Activities

- o Instructor-Led Presentations
- o Participant Practice
- o Video Presentations

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 substance, which when taken into the human body, can impair the ability of the person to operate a vehicle safely.**

2. <u>Categories of drugs</u>

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.

<u>Central Nervous System Depressants</u> This category includes a large number of different drugs, all of which slow <u>down</u> 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.

<u>Central Nervous System Stimulants</u> 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.

<u>Hallucinogens</u> 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.

<u>Dissociative Anesthetics</u> This category consists of the drug PCP and its various analogs (or "chemical cousins") and Dextromethorphan (DXM). 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. Ketamine is an analog of PCP.

<u>Narcotic Analgesics</u> 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 hashish, as well as synthetic compounds.

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.

All available information shows that drug use and abuse are widespread among large segments of the American public.

A 2002 survey (National Survey on Drug Use and Health) revealed that one in seven Americans aged 12 years or older (14.2 percent or 33.5 million people) admitted driving under the influence of alcohol at least once in the past year. The same survey also revealed that in 2003, an estimated 19.5 million Americans, or 8.2 percent of the population aged 12 years or older, were current illicit drug users, and that marijuana was the most commonly used illicit drug, with a rate of 6.2 percent (14.6 million) in 2003.

In 2003, an estimated 11 million people reported driving under the influence of an illicit drug during the past year. As many as 18 percent of 21 year-olds reported having driven under the influence of drugs at least once during the past year. (NSDUH Report: Drugged Driving, 2003 Update)

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. Five eye examinations are especially helpful:

- o Resting Nystagmus
- o Tracking Ability
- o Pupil Size
- o Horizontal Gaze Nystagmus
- o Vertical Nystagmus

Resting Nystagmus is referred to as jerking as the eyes look straight ahead. This condition is not frequently seen. Its presence usually indicates a pathology or high doses of a drug such as PCP.

NOTE: Resting Nystagmus may also be a medical problem.

Although this observation is an important medical assessment, it is NOT an HGN administrative procedure step.

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 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 generally have constricted pupils. Subjects under the influence of CNS stimulants or hallucinogens generally have dilated pupils. Cannabis generally causes pupil dilation. Most CNS Depressants, Dissociative Anesthetics and Inhalants generally leave pupil size within the 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 generally occurs with subjects under the influence of three categories of drugs (DID):

- o CNS depressants (including alcohol)
- o Inhalants
- o Dissociative Anesthetics

The nystagmus generally will be present with a very early angle of onset. Resting nystagmus may be evident especially with high doses. That is a distinct jerking of the eyes even as the suspect stares straight ahead.

Vertical Nystagmus is another easy-to-administer test. Position the object horizontally, approximately 12-15 inches in front of the subject's nose. Instruct the subject to hold the head steady and follow the stimulus with the eyes only. Then, slowly and steadily raise the stimulus 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 Dissociative Anesthetics, 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 usually depress the heartbeat, blood pressure, respiration and many other processes controlled by the brain.

Examples
Alcohol
Rohypnol
Anti-Anxiety Tranquilizers (e.g., Valium, Xanax)
Barbiturates
Muscle Relaxants
Many Others

General Indicators

"Drunken" behavior	Sluggish
Uncoordinated	Disoriented
Drowsy	Thick, Slurred Speech

Eye Indicators

Horizontal Gaze Nystagmus generally present.
Vertical Nystagmus possibly present.
Pupil size usually normal (except that the drug Methaqualone and Soma usually cause 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.,dextroamphetamine, amphetamine sulfate, etc.)
Methamphetamine

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 generally will not be present.
Pupils generally will be dilated.

3. Hallucinogens

Action

Hallucinogens may 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
MDMA (Ecstasy)
Many Others

General Indicators

Hallucinations	Disorientation
Dazed Appearance	Paranoia
Body Tremors	Difficulty in Speech
Uncoordinated	Nausea
Perspiring	Piloerection (goose bumps)

Eye Indicators
Nystagmus generally will not be present.
Pupils generally will be dilated.

4. Dissociative Anesthetics

Action
Dissociative Anesthetics are powerful anesthetics. However, they also cause 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 generally will be present, often with early onset.
Vertical nystagmus generally will be present.
Pupil size generally normal.

5. Narcotic Analgesics

<u>Action</u>
All narcotic analgesics share three important characteristics: they relieve pain; they produce withdrawal signs and symptoms when the drug is stopped after chronic administration; and, they suppress the withdrawal signs and symptoms of chronic morphine administration.

<u>Examples</u>

Morphine	Fentanyls
Heroin	Demerol
Codeine	Methadone
	OxyContin
Many Other Opium Derivatives	Many Other Synthetic Opiates

<u>General Indicators</u>

"On the Nod"	Facial Itching
Droopy Eyelids	Low, Raspy Speech
Depressed Reflexes	Fresh Puncture Marks May Be Evident
Dry Mouth	

<u>NOTE</u>: A tolerant user who has taken their "normal" dose of narcotic analgesic may not exhibit these general indicators.

<u>Eye Indicators</u>
Nystagmus generally will not be present.
Pupils generally will be constricted.

6. Inhalants

<u>Action</u>
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.

<u>Examples</u>
Volatile Substances (glue (toluene), 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 generally present.
Vertical nystagmus possibly present.
Pupil size generally normal.

7. Cannabis

Action

Marijuana and other Cannabis products impair the attention process. Ability to perform divided attention tasks diminishes under the influence of Cannabis.

Examples

Marijuana	Marinol
Hashish	Dronabinol
Hash Oil	

General Indicators

Reddening of Conjunctiva	Disoriented
Body Tremors	Relaxed inhibitions
Odor of Marijuana	Difficulty in Dividing Attention

Eye Indicators

Nystagmus generally will not be present.
Pupil size will generally be dilated, but sometimes can be normal.

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.

Polydrug use is defined as ingesting drugs from two or more drug categories. 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.

It is actually more common for an officer to encounter polydrug users than single drug users. In 1985, during the Los Angeles field validation study of the DRE program, 72% of the suspects had two or more drugs in them. Alcohol was often found in combination with one or more other drugs. But, if we discount alcohol, nearly half (45%) of the field study suspects had two or more other drugs in them.

In 1989, during DRE certification training in New York City, two thirds (67%) of the suspects evaluated had two or more drugs other than alcohol in their urine.

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 <u>combination of effects</u> may be observed in the suspect. The effects may vary widely, depending on exactly which 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 four general ways.

1. <u>Null</u> - Neither drug has an effect on the indicator.

   Null Effect: The combination of no action plus no action equals no action.

   <u>EXAMPLE OF NULL EFFECTS</u>: CNS Stimulant and Narcotic Analgesic. Neither drug causes nystagmus, there-fore you will <u>not</u> see nystagmus with this combination.

2. <u>Overlapping</u> - Each drug may affect the suspect in some different way. In combination, <u>both</u> effects may appear.

   Overlapping Effect: Action plus no action equals action.

EXAMPLE OF OVERLAPPING EFFECTS: Dissociative Anesthetic and Narcotic Analgesic. Dissociative Anesthetic will enhance nystagmus, while a Narcotic Analgesic does not cause nystagmus. There-fore, you will see nystagmus.

3. Additive - The two drugs may independently produce some similar effects. In combination, these effects may be enhanced.

   Additive Effect: Action plus the same action reinforces the action.

   EXAMPLE OF ADDITIVE EFFECTS: Stimulants and Hallucinogens both cause pupil dilation. Pupils would be dilated.

4. Antagonistic - The two drugs may produce some effects that are exactly opposite. In combination, these effects may mask each other.

   Antagonistic Effect: Action versus opposite action can't predict the outcome.

   EXAMPLE OF ANTAGONIS-TIC EFFECTS: A CNS Stimulant usually causes pupil dilation, a narcotic usually causes constriction. It is possible that someone who is simultaneously under the influence of a stimulant and a narcotic may have pupils that are nearly normal in size. It is also possible that the suspect's pupils may be dilated at one time, and then become constricted, as the effects of one drug diminish while the effects of the other increase.

E. DEALING WITH SUSPECTED DRUG INFLUENCE OR MEDICAL IMPAIRMENT

Participants 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. Name the four eye examinations that provide important indicators of drug influence or medical impairment.

5. What kind (category) of drug is PCP? What about marijuana? What about Valium?

6. What category (or categories) of drug usually causes (or cause) the pupils to <u>constrict</u>?

7. What category (or categories) of drug causes (or cause) the pupils to <u>dilate</u>?

8. What categories of drugs usually will <u>not</u> induce horizontal gaze nystagmus?

9. What kind (category) of drug is methamphetamine? What about LSD? What about Peyote?

10. What does the term "polydrug use" mean?

Answers To Review Questions

1. For purposes of this training, "a drug is any substance, which when taken into the human body, can impair the ability of the person to operate a vehicle safely."

2. The seven categories are:
   - Central Nervous System Depressants
   - Central Nervous System Stimulants
   - Hallucinogens
   - Dissociative Anesthetics
   - Narcotic Analgesics
   - Inhalants
   - Cannabis

3. Alcohol is a CNS depressant. Cocaine is a CNS stimulant. Heroin is a narcotic analgesic.

4. The four key eye examinations include:
   - Tracking Ability
   - Pupil Size
   - Horizontal Gaze Nystagmus
   - Vertical Nystagmus

5. PCP is a Dissociative Anesthetic; that category consists only of PCP and its various analogs. Marijuana is Cannabis. Valium is a CNS depressant.

6. Narcotic Analgesics usually cause the pupils to constrict.

7. CNS Stimulants, Hallucinogens, and Cannabis usually cause the pupils to dilate. Sometimes Cannabis can leave pupils normal.

8. CNS Stimulants, Hallucinogens, Narcotic Analgesics and Cannabis do not cause horizontal gaze nystagmus.

9. Methamphetamine is a CNS stimulant. LSD and Peyote are Hallucinogens.

10. "Polydrug use" is the practice of ingesting drugs from two or more drug categories, i.e., combing drugs.

CATEGORY

Signs/ Symptoms	CNS Depressants	CNS Stimulants	Hallucinogens	Dissociative Anesthetic
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 over-stimulate many other processes of the body.	They cause the user to perceive things differently from what they really are and they may cause hallucinations.	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	Present	Not present	Not present	Present, with early onset and very distinct jerking
Nystagmus -Vertical	May be present	Not present	Not present	Present
Pupil Size	Normal (except that the drug Methaqualine Soma causes pupils to dilate)	Will be dilated	Will be dilated	Is 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	Reddening of Conjunctiva, Body Tremors, odor of Marijuana, Disoriented, Relaxed Inhibitions, Difficulty in Dividing Attention
EYE INDICATORS Nystagmus - Horizontal	Not present	Will be present	Not present
Nystagmus - Vertical	Not present	May be present	Not present
Pupil Size	Will be constricted	Is normal	Will be dilated, but may be normal