



DWI Detection and Standardized Field Sobriety Testing

PARTICIPANT MANUAL



DWI Detection and Standardized Field Sobriety Testing Course

Participant Manual

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2/2023 Curriculum

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Preface

The DWI Detection and Standardized Field Sobriety Testing (SFST) training curriculum prepares police officers and other qualified persons to conduct the SFSTs for use in driving while impaired (DWI) investigations. This training, developed under the auspices and direction of NHTSA and the IACP, has experienced remarkable success since its inception in the early 1980s.

As in any educational training program, an instructor guide is considered a “living document” that is subject to updates and changes based on advances in technology and science.

A thorough review is made of information by the IACP Technical Advisory Panel (TAP) with contributions from sources in health care science, toxicology, jurisprudence, optometry, and law enforcement. Based on this information, any appropriate revisions and modifications in background theory, facts, examination, and decision-making methods are made to improve the quality of the instruction as well as the standardization of guidelines for the implementation of the SFST curriculum. The reorganized manuals are then prepared and disseminated, both domestically and internationally. Changes will take effect after approval by TAP, unless otherwise specified or when so designated.

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

1

SFST

Introduction and Overview

LEARNING OBJECTIVES

- State the goals and objectives of the training
- Overview the training schedule and activities
- Describe the Participant Manual contents
- Demonstrate pre-training knowledge of training topics

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LEARNING ACTIVITIES

- Instructor-Led Presentation
- Written Examination

A. Welcoming Remarks and Objectives

Session 1 – Introduction and Overview

Learning Objectives

- State goals and objectives
- Overview schedule and activities
- Describe participant manual contents
- Demonstrate pre-training knowledge of training topics



DWI DETECTION & SFST1-2

Slide 2.

Welcome to the DWI Detection and Standardized Field Sobriety Testing (SFST) Training. The SFST training focuses on a set of examination procedures that provide officers knowledge and tools for DWI detection. The SFST training provides detailed explanations of the evaluation procedures, careful demonstrations of these procedures (both "live" and via video), and ample opportunities for the participants to practice administering the evaluations.

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

- State the goals and objectives of the training
 - Overview the training schedule and activities
 - Describe the Participant Manual contents
 - Demonstrate their pre-training knowledge of training topics
-

B. Housekeeping

Session 1 – Introduction and Overview

Housekeeping

- Paperwork
- Mandatory attendance
- Breaks
- Facility
- Interruptions
- ✓ **Electronic devices off**



DWI DETECTION & SFST1-3

Slide 3.

C. Participant Introductions

Session 1 – Introduction and Overview

Participant Introductions

- Name
- Agency affiliation
- Experience



DWI DETECTION & SFST 1-4

Slide 4.

Session 1 – Introduction and Overview



DWI DETECTION & SFST 1-5

Slide 5.

D. Training Goals

Session 1 – Introduction and Overview

Training Goal

Increase deterrence of DWI violations; thereby reducing the number of crashes, deaths, and injuries caused by impaired drivers.



DWI DETECTION & SFST 1-6

Slide 6.

The goal of this training is to ultimately increase deterrence of DWI violations; thereby reducing the number of crashes, deaths, and injuries caused by impaired drivers.

Session 1 – Introduction and Overview

Enforcement Goals

- General DWI deterrence
- DWI detection phases, clues, and techniques
- DWI case requirements



DWI DETECTION & SFST 1-7

Slide 7.

Enforcement goals are to identify:

- Enforcement's role in general DWI deterrence
 - DWI detection phases, clues, and techniques
 - Requirements for organizing and presenting testimonial and documentary evidence in DWI cases
-

E. Statistics and Data

Session 1 – Introduction and Overview

Alcohol-impaired drivers kill one person every 45 minutes

Alcohol-impaired crashes kill 1 person every **45** minutes

An average of **32** people die every day from alcohol-impaired crashes

DWI DETECTION & SFST 1-8

Slide 8.

In 2020 there were 11,654 fatalities in motor vehicle traffic crashes in which at least one driver was alcohol-impaired. This represented 30 percent of all traffic fatalities in the United States for the year. Spread across the year, this amounted to 32 people dying each day in alcohol-impaired crashes, or one person every 45 minutes.

Source:

National Center for Statistics and Analysis. (2022, April). Alcohol-impaired driving: 2020 data (Traffic Safety Facts. Report No. DOT HS 813 294).

Session 1 – Introduction and Overview

State and Local Data

- Approximately _____ people now live in _____
- About _____ of these people will die in vehicle crashes
- About _____ will die in DWI crashes

DWI DETECTION & SFST 1-9

Slide 9.

Approximately _____ people now live in _____. About _____ of these people will die in vehicle crashes. About _____ will die in DWI crashes.

F. Training Objectives

Session 1 – Introduction and Overview

Job Performance Objectives

- Recognize evidence
- Administer SFSTs
- Describe evidence
- Video/audio evidence



DWI DETECTION & SFST 1-10

Slide 10.

At the conclusion of this training, participants will demonstrate the ability to:

- Recognize and interpret evidence of DWI violations
 - Administer and interpret SFSTs
 - Describe DWI evidence clearly and convincingly in written reports and verbal testimony
 - Ensure video and/or audio evidence, if available, is consistent with other evidence
-

Session 1 – Introduction and Overview

Job Performance Enabling Objectives



Refer to your participant manual

DWI DETECTION & SFST 1-11

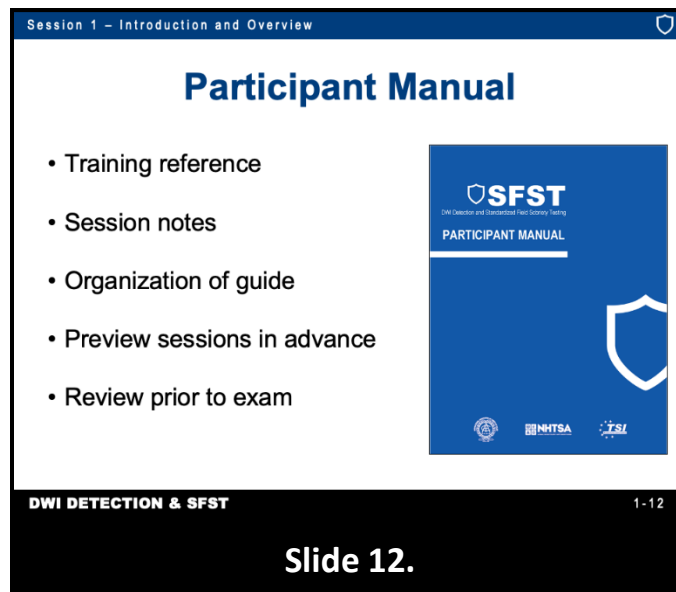
Slide 11.

Job Performance Enabling Objectives

- Understand the tasks and decisions of DWI detection
- Recognize the magnitude and scope of DWI-related crashes, deaths, injuries, property loss, and other social aspects of the DWI problem
- Understand the deterrent effects of DWI enforcement
- Understand the DWI enforcement legal environment
- Know and recognize typical vehicle maneuvers and human indicators symptomatic of DWI that are associated with initial observation of vehicles in operation
- Know and recognize typical reinforcing maneuvers and indicators that come to light during the stopping sequence
- 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 subjects
- Know and recognize typical behavioral clues of alcohol and/or other drug impairment that may be seen during the subject's exit from the vehicle.
- Understand the role and relevance of psychophysical testing in pre-arrest screening of DWI subjects
- Understand the role and relevance of preliminary breath testing in pre-arrest screening of DWI subjects
- Know and carry out appropriate administrative procedures for the Horizontal Gaze Nystagmus (HGN) test
- Know and carry out appropriate administrative procedures for validated divided attention psychophysical tests
- Know and recognize typical clues of alcohol and/or other drug impairment that may be seen during administration of the SFSTs

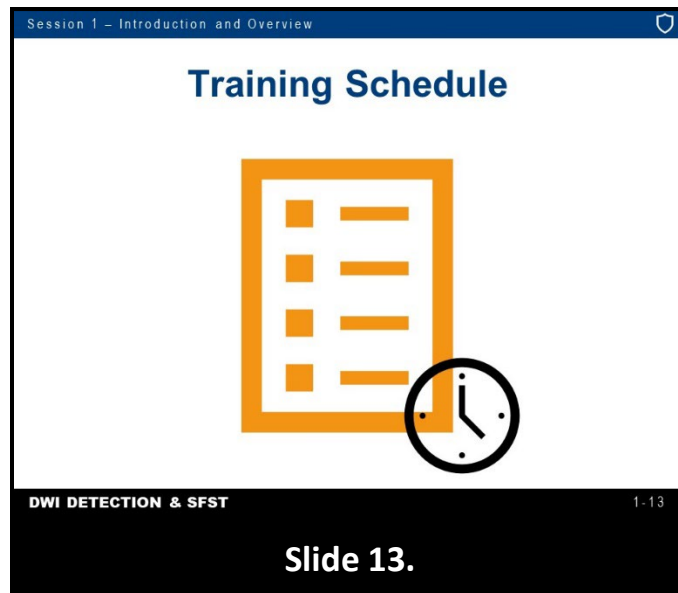
- Understand the factors that may affect the accuracy of preliminary breath testing (PBT) devices
 - Understand the elements of DWI prosecution and their relevance to DWI arrest reporting
 - Choose appropriate descriptive terms to convey relevant observations of DWI evidence
 - Write clear, descriptive narrative DWI arrest reports
-

G. Overview of Participant Manual



The Participant Manual is a reference document for this training. The guide contains slide images for each session. Additional information is included below each slide. To get the most out of the training, read each session prior to class and use the guide to review the material prior to taking the final exam.

H. Training Schedule

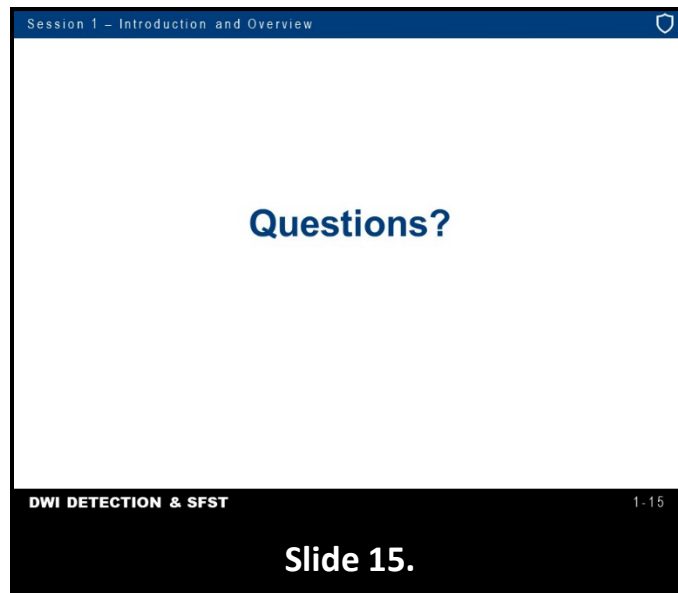


I. Glossary of Terms



The Glossary of Terms used in the training is at the end of this session.

J. Course Pre-Test Administration



DWI DETECTION AND STANDARDIZED FIELD SOBRIETY TESTING (SFST)

GLOSSARY OF TERMS

ADDICTION: Habitual, psychological, and physiological dependence on a substance beyond one's voluntary control.

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, as measured by a breath testing device.

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: Concentrating on more than one thing at a time.

DIVIDED ATTENTION TEST: A test which requires the subject to concentrate on both mental and physical tasks at the same time. The two psychophysical tests Walk and Turn (WAT) and One Leg Stand (OLS) require the subject to divide their attention.

DRUG RECOGNITION EXPERT (DRE): An individual who successfully completed all phases of the DRE training requirements for certification established by the IACP and NHTSA. The word "evaluator," "technician," or similar words may be used as a substitute for "expert," depending upon locale or jurisdiction.

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

EXPERT WITNESS: A person skilled in some art, trade, science or profession, having knowledge of matters not within the knowledge of persons of average education, learning and experience, who may assist a jury in arriving at a verdict by expressing an opinion on a state of facts shown by the evidence and based upon his or her special knowledge. (NOTE: Only the court can determine whether a witness is qualified to testify as an expert.)

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

GAIT ATAXIA: An unsteady, staggering gait (walk) in which walking is uncoordinated and appears to be “not ordered.”

GENERAL INDICATOR: Behavior or observations of the subject that are observed and not specifically tested for. (Observational and Behavioral Indicators)

HORIZONTAL GAZE NYSTAGMUS (HGN): Involuntary jerking of the eyes occurring as the eyes gaze to the side. The first test administered in the SFSTs.

IMPAIRMENT: One of the several items used to describe the degradation of mental and/or physical abilities necessary for safely operating a vehicle.

IMPLIED CONSENT LAW: Suspected DWI drivers are deemed to have given their consent to submit to chemical testing. If the driver fails to provide a chemical test, they can be subject to license sanctions.

NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION: An Administration within the United States Department of Transportation that exercises primary responsibility for coordinating federal efforts to ensure the safe design and operation of motor vehicles.

NYSTAGMUS: An involuntary jerking of the eyes.

ONE LEG STAND (OLS): A divided attention field sobriety test. One of the tests administered in the SFSTs.

PER SE: Used to describe a law which makes it illegal to drive while having a certain percentage of alcohol in the blood or breath.

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. Depending on agency policy, the officer may administer or could arrange to have a preliminary breath test conducted.

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.

PROBABLE CAUSE: It is more than mere suspicion; facts and circumstances within the officer's knowledge, and of which he or she has reasonably trustworthy information, are sufficient to warrant a person of reasonable caution to believe that an offense has been or is being committed.

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

PSYCHOPHYSICAL TESTS: Methods of investigating the mental (psycho-) and physical characteristics of a person suspected of alcohol or drug impairment. Most psychophysical tests employ the concept of divided attention to assess a suspect's impairment.

REASONABLE SUSPICION: Less than probable cause but more than mere suspicion; exists when an officer, in light of his or her training and experience, reasonably believes and can articulate that criminal activity is taking, has taken or is about to take place.

RESTING NYSTAGMUS: Jerking of the eyes as they look straight ahead.

STANDARDIZED FIELD SOBRIETY TESTs: There are three NHTSA/IACP-approved SFSTs, namely Horizontal Gaze Nystagmus (HGN), Walk and Turn (WAT), and One Leg Stand (OLS). Based on a series of controlled laboratory and field studies, scientifically validated clues of impairment have been identified for each of these three tests. They are the only NHTSA/IACP-approved Standardized Field Sobriety Tests for which validated clues have been identified for DWI investigations.

TRAFFIC SAFETY RESOURCE PROSECUTOR (TSRP): Usually a current or former prosecutor who provides training, education and technical support to traffic crimes prosecutors and law enforcement agencies throughout their State. (For the contact information of your TSRP, contact your Highway Safety Office).

VALID: Conforming to accepted principles. Producing accurate and reliable results; effective.

VALIDATED: A documented act of demonstrating that a procedure, process, and/or activity will consistently lead to accurate and reliable results.

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. The jerking should be distinct and sustained.

WALK AND TURN (WAT): A divided attention field sobriety test. One of the tests administered in SFSTs.

2 SFST

Detection and General Deterrence

LEARNING OBJECTIVES

- Describe the frequency of DWI violations and crashes
- Define general deterrence
- Describe the relationship between detection and general deterrence
- Describe a brief overview of alcohol
- Identify common types of alcohol
- Describe the physiological processes of absorption, distribution, and elimination of alcohol in the body

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LEARNING ACTIVITIES

- Instructor-Led Presentation
- Reading Assignments



Learning Objectives

- Describe frequency of DWI violations and crashes
- Define general deterrence
- Describe relationship between detection and general deterrence
- Describe a brief overview of alcohol
- Identify common types of alcohol
- Describe physiological processes of absorption, distribution, and elimination of alcohol in the body



DWI DETECTION & SFST

2-2

Slide 2.

A. The DWI Problem (Local, State, and National)

Session 2 – Detection and General Deterrence

The DWI Problem

- Prior to 1994, nearly **50%** of total traffic crashes were alcohol-related
- **10,598** alcohol-related fatalities represented **30%** of all traffic fatalities (2020)



DWI DETECTION & SFST2-3

Slide 3.

How widespread is DWI? While not all of those who drive after drinking have a Blood Alcohol Concentration (BAC) of 0.08 or higher (the presumptive or illegal per se limit for DWI in all States) some drivers do have BACs in excess of these limits. Prior to 1994, nearly half of the drivers who died in crashes had been drinking. Each year, tens of thousands of people die in traffic crashes. Throughout the nation, alcohol is the major contributor to traffic fatalities. In 2020, there were 10,598 alcohol-related fatalities representing 30% of all traffic fatalities.

Source:

National Center for Statistics and Analysis. (2022, October). *Traffic Safety Facts 2020: A Compilation of Motor Vehicle Crash Data*. (Report No. DOT HS 813 375). National Highway Traffic Safety Administration.



The Local DWI Problem



DWI DETECTION & SFST

2-4

Slide 4.

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 not simply the work of a relatively few "problem drinkers" or "problem drug users." Many people commit DWI, at least occasionally.

Session 2 – Detection and General Deterrence

Binge and Heavy Drinking

- An estimated 61.6 million people self-reported binge drinking in the past 12 months
- 17.7 million people classify themselves as heavy drinkers



DWI DETECTION & SFST 2-5

Slide 5.

Estimates indicate Nationwide about 61.6 million people the age of 12 and over, self-reported binge drinking in the past 12 months. Additionally, 17.7 million classify themselves as heavy drinkers.

Sources:

Centers for Disease Control and Prevention. (2015). Alcohol-Impaired Driving Among Adults — United States, 2012. *Morbidity and Mortality Weekly Report*. August 7, 2015 / 64(30);814-817. Retrieved from <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6430a2.htm>

Substance Abuse and Mental Health Services Administration. (2021). *Key Substance Use and Mental Health Indicators in the United States: Results from the 2020 National Survey on Drug Use and Health*. (HHS Publication No. PEP21-07-01-003, NSDUH Series H-56). Rockville, MD: Center for Behavioral Health Statistics and Quality, Substance Abuse and Mental Health Services Administration. Retrieved from <https://www.samhsa.gov/data/>

It is estimated each day in the United States people drive while intoxicated 300,000 times but fewer than 3,000 are arrested.

Source:

U.S. Department of Justice—Federal Bureau of Investigation. (2020). Crime in the United States, 2019. Retrieved April 5, 2022, from FBI: UCR: <https://ucr.fbi.gov/crime-in-the-u.s/2019/crime-in-the-u.s.-2019/topic-pages/persons-arrested#:~:text=The%20highest%20number%20of%20arrests,3%2C011.0%20arrests%20per%20100%2C000%20inhabitants>

Session 2 – Detection and General Deterrence

The DWI Problem

What number of drivers commit this violation?



Weekend Nights – 10% or More

DWI DETECTION & SFST 2-6

Slide 6.

A frequently quoted, and often misinterpreted, statistic places the average incidence of DWI at 1 driver in 50. Averaged across all hours of the day and all days of the week, two percent of the drivers on the road are DWI. The 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 at certain times and places many more than two percent of drivers are impaired. The National Highway Traffic Safety Administration (NHTSA) research suggests during the late night, weekend hours as many as 10% of drivers on the roads may be DWI. 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?



Average DWI Violator

- Drives intoxicated 80 times before arrest
- Once every four or five nights
- Some every day

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

DWI DETECTION & SFST

2-7

Slide 7.

Although it may be true, on the average, two percent of drivers are DWI at any given time, it certainly is not the same two percent every time. 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 10% 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.

There are some who drive impaired virtually every day; others commit the violation less often. It is likely 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% of drivers who at least occasionally drive after drinking and the 10% of weekend, nighttime drivers who have BACs above the legal limit.

Sources:

Borkenstein, R. F. (1964, March). *The Role of the Drinking Driver in Traffic Accidents*.
Bloomington, IN: Indiana University, Department of Police Administration.

(1980). *Alcohol Highway Safety Workshop: Participant's Workbook Problem Status*. National Highway Traffic Safety Administration.

(1974, August). *DWI Law Enforcement Training: Instructor Guide*. (P. 139). National Highway Traffic Safety Administration.

Session 2 – Detection and General Deterrence

The DWI Problem

- Far more than 2% of drivers contribute
- Crime committed by a substantial segment of Americans
- Can be fought through a societal approach



DWI DETECTION & SFST 2-8

Slide 8.

These estimates include everyone who drives impaired every day, 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: The fact is 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 many people from all walks and areas of life commit. DWI is a crime that can be fought successfully only through a societal approach of comprehensive community-based programs.

Source:

National Center for Statistics and Analysis. (2021). Alcohol-impaired driving: 2019 data. (Traffic Safety Facts. Report No. DOT HS 813 120). National Highway Traffic Safety Administration.

Session 2 – Detection and General Deterrence

Alcohol-Related Crash Fatalities

- 26% on weekends were alcohol-impaired
- 3 times higher at night
- 1.02 million DWI arrests in 2019
- Average one fatality every 52 minutes
- Cost society approximately \$44 billion

DWI DETECTION & SFST 2-9

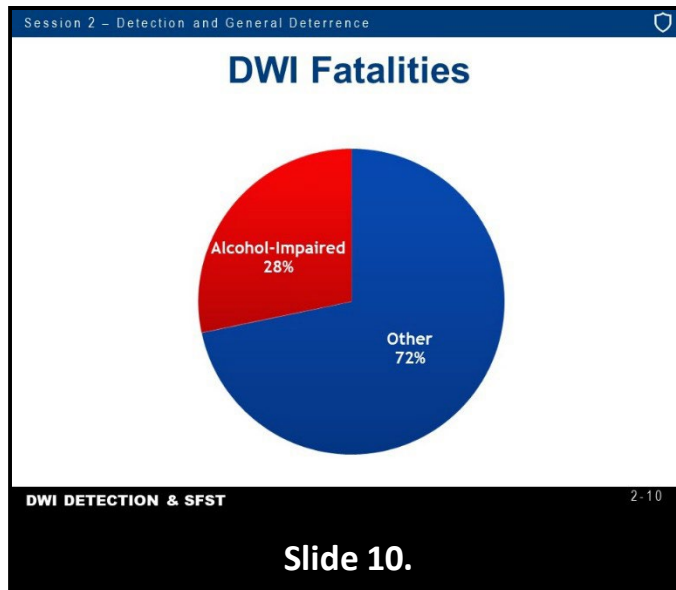
Slide 9.

Twenty-six percent of all fatal crashes on weekends were alcohol impaired. Alcohol-impaired drivers involved in fatal crashes were 3 times higher at night. 1.02 million drivers were arrested for DWI in 2019. These alcohol-related fatalities represent an average of one alcohol-related fatality every 52 minutes. Based on the most current cost data available, these alcohol-related fatalities cost society approximately \$44 billion in lost productivity, medical expenses, property damages, and other related expenditures.

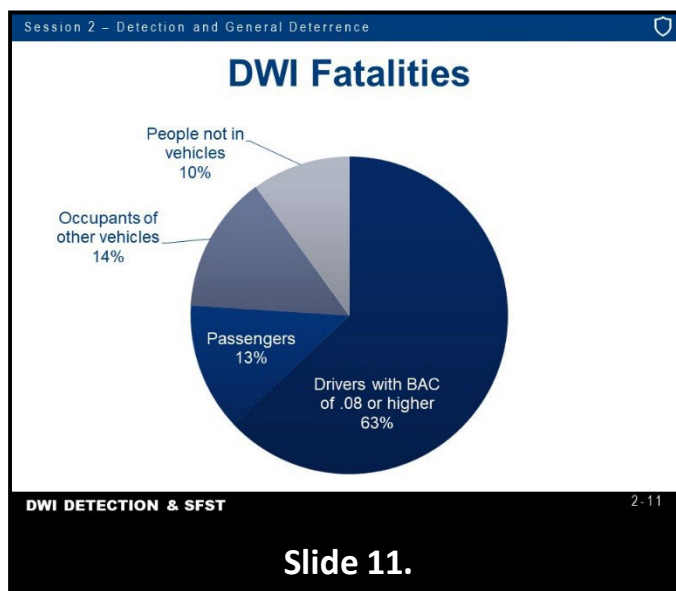
Sources:

National Center for Statistics and Analysis. (2021). Alcohol-impaired driving: 2019 data. (Traffic Safety Facts. Report No. DOT HS 813 120). National Highway Traffic Safety Administration.

U.S. Department of Justice—Federal Bureau of Investigation. (2020). *Crime in the United States, 2019*. Retrieved April 5, 2022, from FBI: UCR: <https://ucr.fbi.gov/crime-in-the-u.s/2019/crime-in-the-u.s.-2019/topic-pages/persons-arrested#:~:text=The%20highest%20number%20of%20arrests,3%2C011.0%20arrests%20per%20100%2C000%20inhabitants>



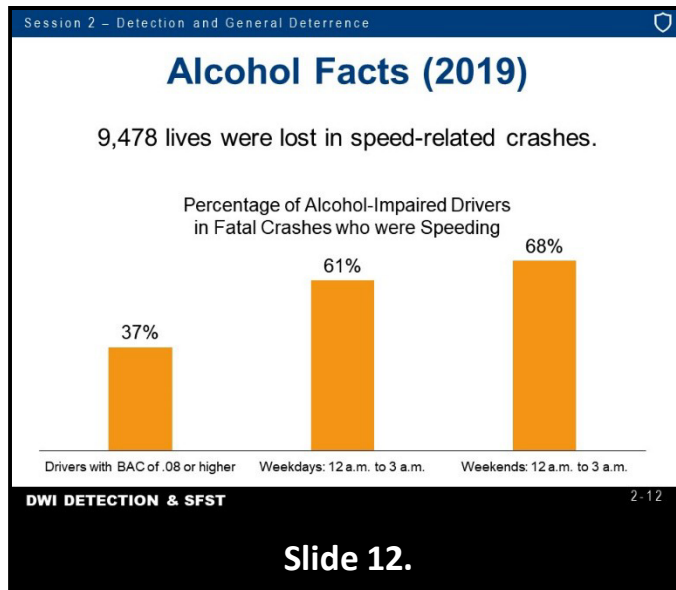
In 2019, 10,142 lives were lost in alcohol-impaired crashes representing 28% of the total motor vehicle fatalities in the U.S.



Of the 10,142 people who died in alcohol-impaired-driving crashes in 2019, drivers with a BAC of .08 or higher accounted for 63% of the fatalities. Thirteen percent were passengers riding with a driver with a BAC of .08 or higher. Fourteen percent of these fatalities were occupants of other vehicles. Ten percent were persons not in vehicles.

Source:

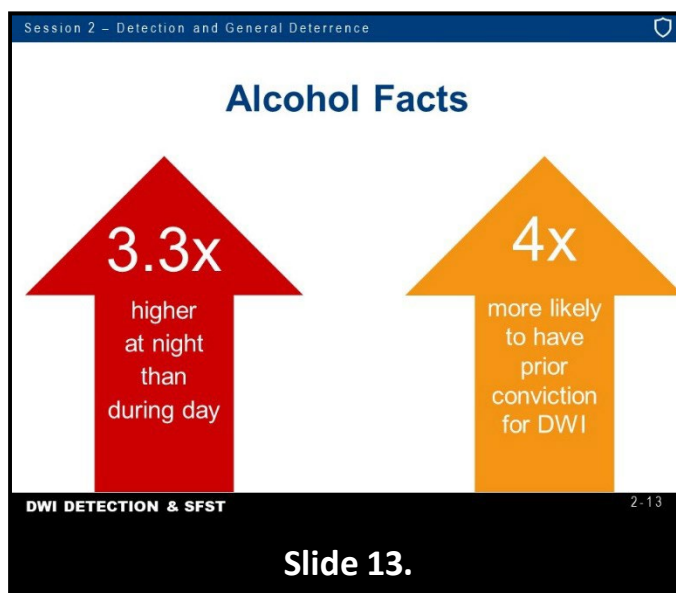
National Center for Statistics and Analysis. (2021). Alcohol-impaired driving: 2019 data. (Traffic Safety Facts. Report No. DOT HS 813 120). National Highway Traffic Safety Administration.



In 2019, 9,478 lives were lost in speed-related crashes. Thirty-seven percent of all drivers with a BAC of .08 or higher involved in fatal crashes were speeding. Between midnight and 3:00 a.m., 61% of speeding drivers involved in fatal crashes on weekdays had a BAC of .08 or higher. On weekends, it was even higher – 68% of speeding drivers involved in fatal crashes had a BAC of .08 or higher.

Source:

National Center for Statistics and Analysis. (2021). Alcohol-impaired driving: 2019 data. (Traffic Safety Facts. Report No. DOT HS 813 120). National Highway Traffic Safety Administration.



The rate of alcohol impairment for drivers involved in fatal crashes was 3.3 times higher at night than during the day. Drivers with a BAC of .15 or higher who were involved in fatal crashes were

four times more likely to have a prior conviction for driving while impaired as compared to drivers involved in fatal crashes with no alcohol involvement.

Source:

National Center for Statistics and Analysis. (2021). Alcohol-impaired driving: 2019 data. (Traffic Safety Facts. Report No. DOT HS 813 120). National Highway Traffic Safety Administration.



In 2020, 11,654 alcohol-impaired drivers (67%) involved in fatal crashes had a BAC of .15 or higher. Males account for 80% of all alcohol-impaired traffic fatalities. This means the fatal alcohol-impaired crash involvement rate was four times higher for male drivers than for females.

Source:

National Center for Statistics and Analysis. (2020). *Alcohol-Impaired Driving: 2020 Data*. (Traffic Safety Facts. Report No. DOT HS 813 294). Washington, D.C.: National Highway Traffic Safety Administration.

B. Concept of General Deterrence

Session 2 – Detection and General Deterrence

General Deterrence

The fear of arrest



DWI DETECTION & SFST 2-15

Slide 15.

The fear of arrest is the leading deterrent. One approach to reducing the number of drinking drivers is general deterrence of DWI. General deterrence of DWI is based in the driving public's fear of being arrested. If enough violators come to believe there is a good chance 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 they will get caught, sooner or later, if they continue to drive while impaired.

How many DWI violators must be arrested in order to convince the public there is a real risk of arrest for DWI?

Several programs have demonstrated significant deterrence can be achieved by arresting 1 DWI violator for every 100 DWI violations committed. Currently, however, for every DWI violator arrested, there are between 500 and 2,000 DWI violations committed.



General Deterrence

There is no reason to fear arrest



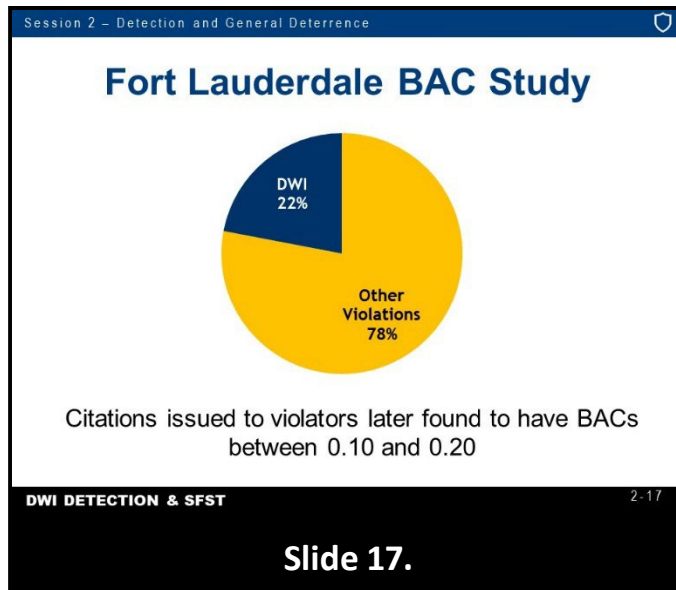
DWI DETECTION & SFST

2-16

Slide 16.

When the chances of being arrested are 1 in 100, the average DWI violator really has little to fear.

There are three noteworthy reasons: (1) DWI violators vastly outnumber police officers - It is not possible to arrest every drinking driver each time they commit DWI; (2) Some officers are not highly skilled at DWI detection - They fail to recognize and arrest many DWI violators; and, (3) Some officers are not motivated to detect and arrest DWI violators.



Significant Findings: In a 1975 study conducted in Fort Lauderdale, Florida, only 22% 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% of the DWI violators they investigated.

Source:

(1976, December). *Selective Traffic Enforcement Program – STEP-BAC (Blood Alcohol Content) in Fort Lauderdale, Florida*. (Report No. DOT HS 801 956), Fort Lauderdale, FL.

Session 2 – Detection and General Deterrence

Fort Lauderdale BAC Study

For every DWI violator arrested...



Three others were contacted and released

DWI DETECTION & SFST 2-18

Slide 18.

Implication: For every DWI violator actually arrested, three others are contacted by police officers, face to face, but are released without arrest. Significant improvement in arrest rate could be achieved if officers were more skilled at DWI detection.

Source:

Hause, J., Matheson, D., Hannon, R., & Chavez, E. (1977, January). *Increased D.U.I. Enforcement Program: Stockton, California Project Evaluation*. (Contract No. DOT-HS-5-01194). U.S. Department of Transportation/National Highway Traffic Safety Administration.

Session 2 – Detection and General Deterrence

The Ultimate Goal: Changing Behavior

- Avoid committing DWI
- Control drinking prior to driving
- Select alternative transportation
- Avoid riding with impaired drivers
- Recognize impaired driving is unacceptable

DWI DETECTION & SFST 2-19

Slide 19.

What must the comprehensive community based DWI programs seek to accomplish? Ultimately, nothing less than fundamental behavioral change on a widespread basis. This goal is achieved by encouraging more Americans to avoid committing DWI either by avoiding or controlling drinking prior to driving or by selecting alternative transportation. Ride sharing services (for example, Uber and Lyft) are becoming increasingly popular as an alternative transportation. The goal is also achieved by intervene actively to prevent others from committing DWI (for example, putting into practice the theme "friends don't let friends drive drunk") and avoiding 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.

Session 2 – Detection and General Deterrence

Two Approaches

Prevention



Deterrence



DWI DETECTION & SFST 2-20

Slide 20.

How can we bring about these changes in behavior? How can we discourage impaired driving, 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. Two: deterrence -- only offers a partial or limited solution, but it is available right now.

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Prevention

- Promote positive attitudes
- DWI is wrong
- No one has the right to endanger others
- DWI cannot be tolerated or condoned



DWI DETECTION & SFST 2-21

Slide 21.

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

positive attitudes and by fostering a set of values that reflects individual responsibilities toward drinking and driving.

Preventive countermeasures seek society's acceptance of the fact that DWI is wrong. Some people believe drinking and driving is strictly an individual's personal business; 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 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.

Session 2 – Detection and General Deterrence

Deterrence

- Driving public's fear of being arrested
- Enough violators must be arrested to convince public they will get caught



DWI DETECTION & SFST2-22

Slide 22.

General deterrence of DWI is based on the driving public's fear of being arrested. If enough violators come to believe there is a good chance they will get caught, some of them (at least) will stop committing DWI at least some of the time.

Unless there is a real risk of being arrested, there will not be much fear of arrest. Law enforcement must arrest enough violators to convince the public they will get caught if they continue to drive while impaired.

C. Relating Detection to Deterrence Potential

Session 2 – Detection and General Deterrence

Deterrence

- Deterrence is negative reinforcement
- Strives to change DWI behavior



DWI DETECTION & SFST2-23

Slide 23.

DWI countermeasures that seek a shortcut to the ultimate goal of behavioral change usually 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 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.

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The Fear of Being Caught and Punished

Long term costs and inconvenience



DWI DETECTION & SFST 2-24

Slide 24.

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 a 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 come to this realization. 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.



Specific Deterrence



- Caught and arrested
- Public must perceive appreciable risk of being caught and convicted
- Enforcement creates and sustains fear of being caught

DWI DETECTION & SFST

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Slide 25.

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 it will convince the specific violator there is indeed something to fear as a result of being caught and to emphasize 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 there is an appreciable risk of being caught and convicted if they commit the crime. If actual and potential DWI violators come to believe 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.

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Specific Deterrence

Supportive roles:
Legislators, Prosecutors, Judiciary, Media



DWI DETECTION & SFST 2-26

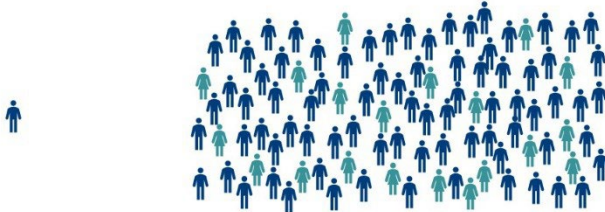
Slide 26.

Obviously, the police alone cannot do the job. Legislators must supply laws 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 the risk is not worth the probable outcome. Each of these elements plays a supportive role in DWI deterrence.

Session 2 – Detection and General Deterrence

How Much Deterrence is Enough?

For every DWI violator arrested, there are approximately 100 undetected DWI violations.



DWI DETECTION & SFST 2-27

Slide 27.

Estimates from around the country vary. For every DWI violator arrested, there are approximately 100 undetected DWI violations. According to the CDC (2014), there were 111 million incidents of DWI per year. According to the FBI UCR, 1.08 million DWI arrests were made in 2015, which means law enforcement arrested approximately one out of every 100 DWI episodes.



How Great is the Risk?

- Does the average DWI violator fear arrest?
- Should they be afraid?
- Intense publicity may enhance the perceived risk



DWI DETECTION & SFST

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Slide 28.

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 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.



Changing the Odds

- Arrest enough violators to convince many of them it can happen to them
- As arrest rate increases, odds are it will happen to them eventually



DWI DETECTION & SFST

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Slide 29.

If an arrest/violation ratio of 1 in 100 is not enough to make deterrence work, is it then reasonable to think we can ever make deterrence work? After all, if we doubled DWI arrests to 1 in 50, we would still be missing 49 violators for every one we managed to catch. If we increased arrests tenfold, to 1 in 10, 9 would escape for everyone 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 they have something to fear. We only have to arrest enough of them, enough of the time. As the arrest rate increases, the odds are 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.

D. Evidence of Effective Detection and Effective Deterrence

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Can it be Done? Will it Work?



Realistic increase in DWI enforcement activity will induce a significant degree of general deterrence and a corresponding change in DWI behavior.

DWI DETECTION & SFST 2-30

Slide 30.

Is there any evidence 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.

Session 2 – Detection and General Deterrence

Stockton, California

- Before:
 - Arrest/violation ratio – 1 in 2000 or less
 - Weekend drivers BAC of 0.10 or higher – 9%
- During: Intensive DWI enforcement weekend nights
- Officers intensively trained, enforcement publicized, justice community coordinated

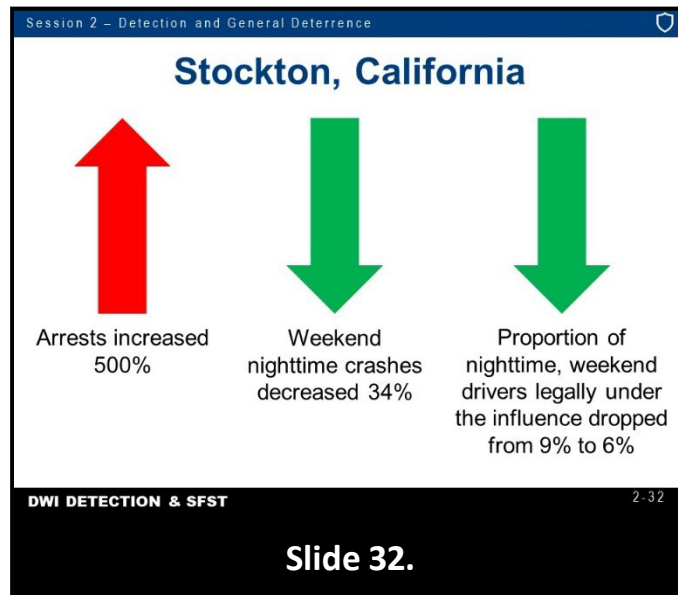
DWI DETECTION & SFST 2-31

Slide 31.

Several enforcement programs have succeeded in achieving significant DWI deterrence. Consider, for example, the three-year intensive weekend DWI enforcement program in Stockton, California. As early as 1975, a study showed 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 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 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%, weekend nighttime collisions had decreased by 34%, and the number of operators committing DWI dropped one third.

The implication of the Fort Lauderdale study, and of other similar studies, was for every DWI violator actually arrested for DWI, three others were contacted by police officers but were not arrested for DWI. From the Stockton study, it is clear significant improvement in the arrest rate could be achieved if officers were more skilled at DWI detection.

Session 2 – Detection and General Deterrence

Improve DWI Detection

Keys to success:

- Officers skilled at DWI detection
- Willing to arrest all violators detected
- Policies and application supported by agency

DWI DETECTION & SFST 2-33

Slide 33.

Improved DWI detection can be achieved in virtually every jurisdiction in the country. The keys to success are police officers who are: Skilled at DWI detection; Willing to arrest every DWI violator who is detected; and, Supported by their agencies in all aspects of this program from policy through practical application.

Since the historical Stockton study, numerous States have conducted similar studies to determine the degree of effect 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 when the number of arrests for DWI increased the percentage of alcohol-related fatalities decreased. Further, the results of a study conducted in Florida from 1981-1983 showed when DWI arrests per licensed driver increased total fatalities decreased (12-month moving average).

Session 2 – Detection and General Deterrence

Detection: Key to Deterrence

- Deterrence can vastly exceed level of enforcement officers achieve
- Weekend DWI arrests can increase by as much as 500%, as in the Stockton study

DWI DETECTION & SFST 2-34

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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. Weekend DWI arrests can increase by as much as 500%, as in the Stockton study.

Session 2 – Detection and General Deterrence

Example of General Deterrence

When arrest/violation ratio is 1 in 100:

- Many violators WILL be caught
- General perception level of being caught increases
- Behavior changes

DWI DETECTION & SFST 2-35

Slide 35.

The law of averages quickly starts to catch up with DWI drivers. 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 DWI arrests went up over 500% in Stockton, citations for other traffic violations increased by a comparatively modest 99%. The implication is 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.

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Increased DWI Detection Skills

- Community benefits
- Officers recognize cues and clues
- Gained confidence in field sobriety tests
- Fewer violators stopped avoided arrest



DWI DETECTION & SFST 2-36

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What have the results of these studies shown? Basically, they have shown 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 far fewer of the violators being stopped now avoided detection and arrest. The difficulty in detecting DWI among operators personally contacted by untrained officers has been well documented. Analysis of roadside survey and arrest data suggest for every DWI violator arrested, three others actually have face-to-face contact with police officers but are allowed to go without arrest. Direct support of that inference was found in the Fort Lauderdale BAC study where researchers demonstrated police officers arrested only 22% of the DWI operators they contacted whose BAC levels were subsequently shown to be between 0.10 and 0.20.

Session 2 – Detection and General Deterrence

The ability to detect DWI violators is the key to general deterrence and possibly the greatest impediment to it.

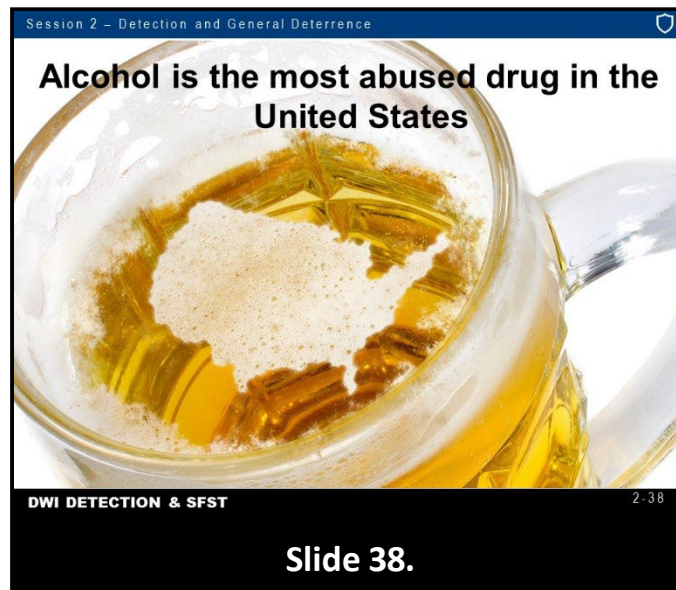


DWI DETECTION & SFST 2-37

Slide 37.

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, the operator 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 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 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 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 without any increase in contacts. This same, or better, degree of effectiveness can happen here.

E. Physiology 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 called an "alcohol" contain 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.

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Types of Alcohol

Methyl Alcohol (Methanol) 

Isopropyl Alcohol (Isopropanol) 

Ethyl Alcohol (Ethanol) 

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Three of the more commonly known alcohols are Methyl, Isopropyl, and Ethyl. Methyl alcohol is also known as Methanol or wood alcohol. Isopropyl Alcohol (Isopropanol) is also known as rubbing alcohol. Ethyl alcohol is also known as Ethanol or beverage alcohol.

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Ethyl Alcohol (Ethanol) Intended for Human Consumption

Chemical Symbols

- ETOH
- C₂H₅OH

$$\begin{array}{c}
 \text{H} & \text{H} \\
 | & | \\
 \text{H}-\text{C}- & \text{C}-\text{OH} \\
 | & | \\
 \text{H} & \text{H}
 \end{array}$$

DWI DETECTION & SFST 2-40

Slide 40.

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".

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Fermentation

Yeast combines with sugars from fruit or grains in a chemical reaction resulting in ETOH.

Sugar + Yeast - Oxygen = Carbon dioxide + Alcohol

DWI DETECTION & SFST 2-41

Slide 41.

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 produce 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 typically be reached is about 14%. There have been reports that some enhanced components and processes yield higher ETOH concentrations.

Source:

Watanabe, D., Wu, H., Noguchi, C., Zhou, Y., Akao, T., & Shimoi, H. (2011, February). Enhancement of the Initial Rate of Ethanol Fermentation Due to Dysfunction of Yeast Stress Response Components Msn2p and/or Msn4p. *American Society of Microbiology (ASM): Applied and Environmental Microbiology*, 77(3).
doi:<https://doi.org/10.1128/AEM.01869-10>

At some point, the yeast dies, so the fermentation stops. Obtaining a higher ethanol content requires a process called distillation.



Distillation

Fermented beverage is boiled at a controlled temperature to extract and concentrate the ethanol fumes.



DWI DETECTION & SFST

2-42

Slide 42.

“Distilled spirits” is the name we give to high ethanol concentration beverages produced by 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. These distilled spirits 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%.

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Common Drink Sizes (0.60 ounces of pure ethanol)

Bottle of beer: 12 ounces of fluid - 5% alcohol		
Glass of wine: 5 ounces of fluid - 12% alcohol		
Shot of whiskey (80 proof): 1 and 1/2 ounces - 40% alcohol		

DWI DETECTION & SFST 2-43

Slide 43.

Over the millennia, during which people have used and abused ethanol, some common-sized servings of the different beverages have evolved.

Beer is normally dispensed in 12-ounce servings. Since beer has an ethanol concentration of about five percent, the typical bottle or can of beer contains a little less than one half ounce of pure ethanol (craft, microbrewery, and imported beverages may contain a higher ethanol concentration).

A standard glass of wine has about five ounces of liquid. Wine is about 12% 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-half ounces of fluid. At a typical concentration of 40% 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.

Source:

National Institute on Alcohol Abuse and Alcoholism. (2017, April 19). *What Is A Standard Drink?*
Retrieved from National Institute of Health: <https://www.niaaa.nih.gov/alcohols-effects-health/overview-alcohol-consumption/what-standard-drink>



Alcohol is a CNS Depressant



DWI DETECTION & SFST

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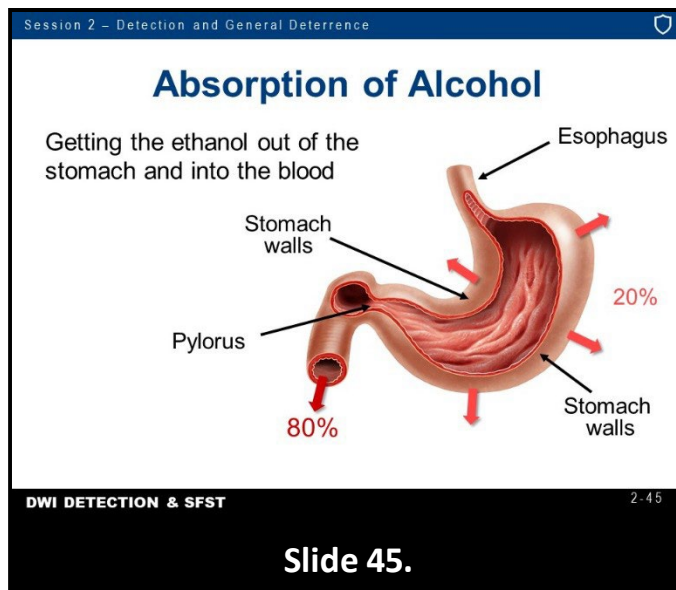
Slide 44.

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 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. Alcohol is almost always introduced into the body orally, i.e., by drinking. Regardless of the method of administration, chemical tests will still reveal the presence of alcohol in blood, breath, or urine.



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 pertaining to alcohol absorption is it doesn't have to be digested in order to move from the stomach to the blood. Another very important fact is alcohol can pass directly through the walls of the stomach. These two facts, taken together, mean 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% of it will make its way directly through the stomach walls. The remaining 80% will pass through 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 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.

Session 2 – Detection and General Deterrence

Distribution of Alcohol

Getting the ethanol into the body's tissues and organs

Basic Principle
Ethanol goes wherever it finds water

DWI DETECTION & SFST 2-46

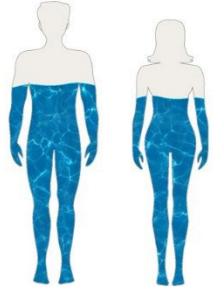
Slide 46.

Once the alcohol moves into the blood, it will be distributed throughout the body. 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.

Session 2 – Detection and General Deterrence

Distribution of Alcohol

- Which parts of the body have lots of water?
- Which parts do not?
- The average male is 68% water
- The average female is 55% water



DWI DETECTION & SFST 2-47

Slide 47.

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 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.

Session 2 – Detection and General Deterrence

Dose Response Relationships

- Time
- Sex
- Weight
- Drinking on empty stomach

DWI DETECTION & SFST2-48

Slide 48.

People sometimes ask, "how 'high' is 'drunk'?" What is the "legal limit" for "drunk driving"? How much can a person drink before becoming "impaired"? Depends... Time? Sex? Weight? Drinking on an empty stomach? A couple of beers can do it. There is no simple answer to these or similar questions except to say any amount of alcohol may affect a person's ability to drive to some degree. States establish a BAC limit at which it is explicitly unlawful to operate a vehicle. In most 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 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 much alcohol to impair someone.

Session 2 – Detection and General Deterrence

Elimination of Alcohol

- Direct excretion
 - Breath
 - Urine
 - Sweat
 - Tears
 - Etc.
- Metabolism

DWI DETECTION & SFST 2-49

Slide 49.

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, urine, sweat, 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.

Session 2 – Detection and General Deterrence

Metabolism in the Liver

- Burns ethanol
- Aided by alcohol dehydrogenase enzyme
- Ultimate products of chemical reaction are carbon dioxide and water
- Average person's BAC drops by about 0.015 per hour

DWI DETECTION & SFST 2-50

Slide 50.

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.

Session 2 – Detection and General Deterrence

Metabolism

How can we speed up the metabolism of alcohol?

- We can't – The liver takes its time burning up the alcohol

km/h

DWI DETECTION & SFST 2-51

Slide 51.

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.

Session 2 – Detection and General Deterrence

Mellanby Effect



DWI DETECTION & SFST 2-52

Slide 52.

A person feels more impaired while his/her BAC is still rising, than at the same level while his/her BAC is declining. The person is not less impaired, but they “feel better;” (the “Mellanby Effect”) which makes them more likely to drive while impaired. Even though a person may feel better on the declining curve, their impairment may be worse. Sample analogy: Imagine driving on a feeder road to the freeway. The speed limit on that feeder road is 45 mph. 45 mph feels like a good speed. You then merge onto the freeway and drive at speeds of 65-70mph. You reach your exit, exit back onto a feeder road. You decrease your speed to 45 mph; however, now 45 mph feels painstakingly slow. This is the Mellanby Effect in a nutshell; you felt the 45 mph was faster before you went faster. You felt you were more impaired before you were more intoxicated.

Sources:

Mellanby, E. (1919). *Alcohol: Its Absorption Into and Disappearance from Blood Under Different Conditions*. London, HMSO: British Medical Research Committee: Special Report Series No. 31.

Holland, M., & Ferner, R. (2017, July). A Systematic Review of the Evidence for Acute Tolerance to Alcohol - the "Mellanby Effect". *Clinical Toxicology (Philadelphia)*, 55(6), 545-556. doi:10.1080/15563650.2017.1296576

Alcohol and the Driver. Council on Scientific Affairs. (1986, January 24-31). *JAMA*, 255(4), 522-527. doi:10.1001/jama.1986.03370040096031

Session 2 – Detection and General Deterrence

Blood Alcohol Concentration

- BAC is the number of grams of alcohol found in 100 milliliters of the person's blood
 - Example: If a person has a BAC of .08, then there is eight one-hundredths of a gram of alcohol in every 100 milliliters of the person's blood

DWI DETECTION & SFST 2-53

Slide 53.

But in another respect, when we contrast alcohol with virtually any other drug, we find impairment by alcohol requires a vastly larger dose than does impairment by the others. Consider exactly what a BAC of 0.08 means. BAC is expressed in terms of the "number of grams of ethanol in every 100 milliliters of blood". Therefore, 0.08 means there is 0.08g of ethanol in every 100 milliliters (mL) of blood. You will find 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, 0.08g equals 80mg and a BAC of 0.08 would be reported as 80mg of ethanol/100mL of blood. Percent means parts per one hundred. In this example 0.08g/100mL 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.

Session 2 – Detection and General Deterrence

Questions?

DWI DETECTION & SFST 2-54

Slide 54.

Session 2 – Detection and General Deterrence

Test Your Knowledge

1. In typical DWI enforcement, one violator in _____ results in arrest.
2. In the Fort Lauderdale study, police officers arrested _____ % of the drivers they contacted whose BACs were .10 to .20.
3. Name three different chemicals that are alcohols.

DWI DETECTION & SFST 2-55

Slide 55.

Test Your Knowledge

1. In typical DWI enforcement, one DWI violation in _____ results in arrest.
2. In the Fort Lauderdale study, police officers arrested _____ % of the drivers they contacted whose BACs were .10 to .20.
3. Name three different chemicals that are alcohols.

Session 2 – Detection and General Deterrence

Test Your Knowledge

4. Which of these is beverage alcohol, intended for human consumption?
5. What is the chemical symbol for beverage alcohol?
6. What is the name of the chemical process by which beverage alcohol is produced naturally?

DWI DETECTION & SFST 2-56

Slide 56.

4. Which of these is beverage alcohol, intended for human consumption?
5. What is the chemical symbol for beverage alcohol?
6. What is the name of the chemical process by which beverage alcohol is produced naturally?

Session 2 – Detection and General Deterrence

Test Your Knowledge

7. What is the name of the process used to produce high concentration beverage alcohol?
8. True or false: Pound for pound, the average woman contains more water than does the average man
9. What do we mean by the “proof” of an alcoholic beverage?

DWI DETECTION & SFST 2-57

Slide 57.

7. What is the name of the process used to produce high concentration beverage alcohol?
 8. True or false: Pound for pound, the average woman contains more water than does the average man.
 9. What do we mean by the "proof" of an alcoholic beverage?
-

Session 2 – Detection and General Deterrence

Test Your Knowledge

10. True or false: Most of the alcohol 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.

DWI DETECTION & SFST 2-58

Slide 58.

10. True or false: Most of the alcohol 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.



Test Your Knowledge

13. In which organ of the body does most of the metabolism of the alcohol take place?
14. 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
15. True or false: It takes about 30 minutes for the average 175-pound man to "burn off" the alcohol in one 12 ounce can of beer.

DWI DETECTION & SFST

2-59

Slide 59.

13. In which organ of the body does most of the metabolism of the alcohol take place?
 14. Multiple choice: Once a person reaches their peak BAC, it will drop at a rate of about per hour.
 - a) 0.025
 - b) 0.015
 - c) 0.010
 15. 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.
-

3 SFST

The Legal Environment

LEARNING OBJECTIVES

Be familiar with:

- Elements of DWI offenses
- Provisions of implied consent
- The relevance of chemical test evidence
- Precedents established through case law

In this session, 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.

CONTENTS

A. DWI Statute: Driving While Under the Influence	3
B. Per Se Statute: Driving with a Prohibited Blood Alcohol Concentration (BAC)	6
C. Implied Consent	8
D. Preliminary Breath Testing (PBT)	12
E. Case Law Reviews	13

LEARNING ACTIVITIES

- Instructor-Led Presentation
- Reading Assignments

An understanding of impaired driving laws that apply in your jurisdiction is critical to successful 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:

- DWI Law
 - Per Se Law
 - Implied Consent
 - Preliminary Breath Test (if applicable)
-

Session 3 – The Legal Environment

Learning Objectives

Be familiar with:

- Elements of DWI offenses
- Provisions of implied consent
- Relevance of chemical test evidence
- Precedents established through case law



DWI DETECTION & SFST3-2

Slide 2.

A. DWI Statute: Driving While Under the Influence

Session 3 – The Legal Environment

DWI Statute



DWI DETECTION & SFST 3-3

Slide 3.

A State's 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.

Session 3 – The Legal Environment

Legal Definitions

- Driving
- Actual Physical Control
- Vehicle
- Location
- Impaired/Under the Influence



DWI DETECTION & SFST 3-4

Slide 4.

Session 3 – The Legal Environment

Probable Cause for DWI Arrest

Opinion based on totality of circumstances there is probable cause to believe defendant committed crime of DWI

- * All elements of crime need to be present

DWI DETECTION & SFST 3-5

Slide 5.

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

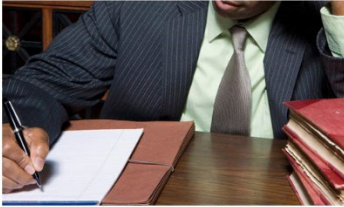
That is, the officer must believe:

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.

Session 3 – The Legal Environment

Conviction

Criminal offense – establish facts
“beyond a reasonable doubt”



DWI DETECTION & SFST 3-6

Slide 6.

In order to convict a person of DWI, it is necessary to establish all elements were present: Operation, Control, Vehicle, and Impairment. If DWI is a criminal offense, the facts must be established "beyond a reasonable doubt." If DWI is a violation, the standard of proof may be less. In either case, it is the officer's responsibility to collect and thoroughly document all evidence for use at trial.

In some States, an operator may be charged with a non-criminal alcohol-related violation and the standard of proof may be less.

B. Per Se Statute: Driving with a Prohibited Blood Alcohol Concentration (BAC)

Session 3 – The Legal Environment

Per Se Statute

Refer to local State information



DWI DETECTION & SFST 3-7

Slide 7.

All States include in their DWI statutes a provision making it illegal to drive with a statutorily prohibited BAC. This provision, often called a Per Se law, creates another mechanism by which a suspect can be prosecuted for a DWI offense. Following is a typical Per Se provision. It is unlawful for any person to: *Operate or be in physical control; Of any vehicle; Within this State; While having a BAC at or above State's level.* These elements may vary from State to State.

Session 3 – The Legal Environment

DWI and DWI Per Se

- DWI – driving while under influence
- Chemical test is additional evidence
- DWI Per Se – driving while having more than a statutorily prohibited BAC
- Chemical test is presumptive evidence

DWI DETECTION & SFST 3-8

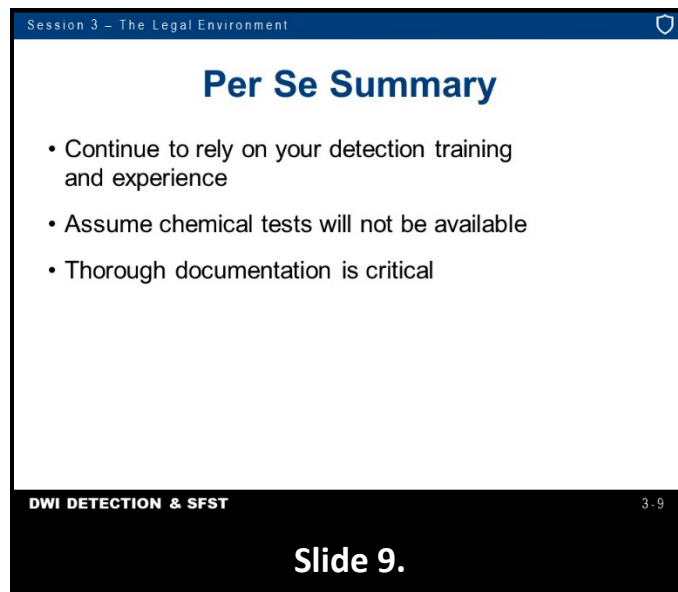
Slide 8.

The DWI and DWI Per Se can work simultaneously to prosecute a suspect for DWI. The DWI law makes it an offense to drive while under the influence of alcohol and/or any drug and the DWI Per Se law makes it an offense to drive while having more than a statutorily prohibited BAC.

The Per Se law is an additional method of prosecuting DWI. For the DWI, the chemical test result is additional evidence. For the DWI Per Se, the chemical test result is presumptive evidence.

The principal purpose of the Per Se law is to aid in prosecution of DWI offenders. It is not necessary for the prosecutor to show the driver was "under the influence." It is sufficient for the State to show the driver's BAC was at or above the State's level. Important to remember, an officer must still have probable cause to believe the driver is impaired before making an arrest. Implied consent usually requires the driver be arrested before the request of a chemical test.

The law also requires the arrest be made for "acts alleged to have been committed while operating a vehicle while under the influence." Therefore, the officer usually must establish probable cause the offense has been committed and make a valid arrest before the chemical test can be requested.

A presentation slide titled "Per Se Summary" with a blue header bar containing "Session 3 - The Legal Environment" and a shield icon. The slide lists three bullet points: "Continue to rely on your detection training and experience", "Assume chemical tests will not be available", and "Thorough documentation is critical". The footer is black with "DWI DETECTION & SFST" on the left, "3-9" on the right, and "Slide 9." in the center.

Session 3 - The Legal Environment

Per Se Summary

- Continue to rely on your detection training and experience
- Assume chemical tests will not be available
- Thorough documentation is critical

DWI DETECTION & SFST 3-9

Slide 9.

Police officers dealing with impaired drivers must continue to rely primarily on their own training and experience in detection to determine whether an arrest should be made. It is impossible to obtain a legally admissible chemical test result until after the arrest has been made. Sometimes drivers will refuse the chemical test after they have been arrested. The case will depend primarily upon the officer's observations and ability to articulate their testimony. When making a DWI arrest, always assume the chemical test evidence will not be available. It is critical you organize, document, and present your observations and testimony in a clear and convincing manner.

C. Implied Consent

Session 3 – The Legal Environment

Implied Consent Law

Refer to local State information



DWI DETECTION & SFST 3-10

Slide 10.

Implied consent law states suspected DWI drivers are deemed to have given their consent to submit to chemical testing. If the driver fails to provide a chemical test, they can be subject to license sanctions.

Session 3 – The Legal Environment

Elements of Implied Consent

- Operates or controls motor vehicle
- Operator deemed to have given consent to chemical testing
- Arrested for DWI
- Drivers who refuse are subject to license sanctions

DWI DETECTION & SFST 3-11

Slide 11.

The law provides penalties for refusal to submit to the testing. These penalties may include the suspension or revocation of the individual's driver's license.

The purpose of implied consent is to encourage those arrested for DWI to submit to a chemical test so valuable evidence may be obtained.

Session 3 – The Legal Environment

Legal Presumptions

- BAC _____ or more
 - Presumed under the influence
- Less than _____
 - Presumed not under the influence
- At least _____ but below _____
 - No presumption

DWI DETECTION & SFST 3-12

Slide 12.

Legal presumptions define impairment and emphasize the significance of the scientific chemical test evidence. For example, if the chemical test shows the person's BAC is .08 or more it shall be presumed the person is under the influence. In this State, if the test shows the BAC is _____ or less, it shall be presumed the person is not under the influence.

If the test shows the BAC is more than _____ but less than _____, there is no presumption as to whether the person is or is not under the influence. The weight of the chemical test evidence is presumptive of alcohol influence, not conclusive.

The fact finder (court or jury) may accept the legal presumption and conclude the driver was or was not impaired on the basis of the chemical test alone. However, other evidence such as testimony about the defendant's driving, odor of alcohol, appearance, behavior, movements, speech, etc. may be sufficient to overcome the presumptive weight of the chemical test.

Session 3 – The Legal Environment

Example Number 1

- Driver arrested for DWI
- BAC of 0.13
- Chemical test evidence introduced at trial
 - Arresting officer’s testimony was confusing and unclear
 - State unable to prove all elements beyond a reasonable doubt

DWI DETECTION & SFST 3-13

Slide 13.

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

Example 1: A driver is arrested for DWI. A chemical test administered to the driver shows a BAC of 0.13. At the subsequent trial, the chemical test evidence is introduced. However, the arresting officer’s testimony about the defendant’s driving, appearance, and behavior was confusing and unclear. Therefore, the State was unable to prove all of the elements of the crime beyond a reasonable doubt.

Session 3 – The Legal Environment

Example Number 2

- Driver arrested for DWI
- BAC of 0.05
- Chemical test evidence introduced at trial
 - Arresting officer's testimony is clear and descriptive
 - Court finds defendant guilty of DWI

DWI DETECTION & SFST3-14

Slide 14.

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 defendant's driving, odor of alcohol, appearance, slurred speech, and inability to perform divided attention field sobriety tests. The testimony is clear and descriptive. The court finds the defendant guilty of DWI. The difference in outcomes in the two examples cited is directly attributable to how well the arresting officer articulates the evidence other than the chemical test. Remember 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 BAC, many people will demonstrate impaired driving long before that "legal limit" is reached.

D. Preliminary Breath Testing (PBT)

Session 3 – The Legal Environment

Preliminary Breath Testing (PBT)

Refer to local State information



DWI DETECTION & SFST 3-15

Slide 15.

Many States have enacted PBT laws. These laws permit a law enforcement officer to request a driver suspected of DWI to submit to a roadside breath test prior to arrest. PBT laws vary significantly from one State to another.

PBT results may be used to assist in determining whether an arrest should be made. The results may not be admissible as substantive evidence against the defendant in court. Discuss State laws regarding admissibility of PBT results. 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.

E. Case Law Reviews

Session 3 – The Legal Environment

Case Law Reviews

- Landmark court decisions relevant to admissibility of SFSTs
- Challenges may be based on:
 - Scientific validity and reliability
 - Relationship of HGN to specific BAC level
 - Officer training, experience, and application

DWI DETECTION & SFST3-16

Slide 16.

The following cases are landmark court decisions relevant to the admissibility of Standardized Field Sobriety Tests (SFSTs) and 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; and, (3) officer training, experience, and application.

Session 3 – The Legal Environment

SFST Case Law

Refer to local State information



DWI DETECTION & SFST3-17

Slide 17.

Session 3 – The Legal Environment

Horizontal Gaze Nystagmus Case Law

Refer to local State information



DWI DETECTION & SFST 3-18

Slide 18.

Session 3 – The Legal Environment

Search and Seizure Case Law

Refer to local State information



DWI DETECTION & SFST 3-19

Slide 19.

Session 3 – The Legal Environment

Other Relevant Case Law

Refer to local State information

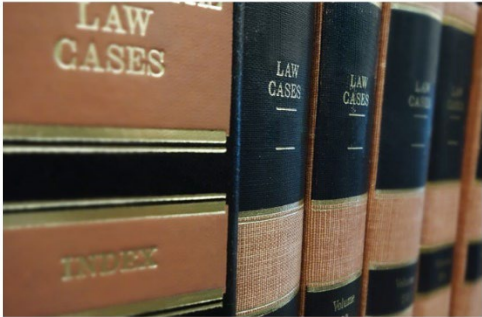


DWI DETECTION & SFST 3-20

Slide 20.

Session 3 – The Legal Environment

Case Law Summary



DWI DETECTION & SFST 3-21

Slide 21.

To summarize, the prevailing trend in court is to accept HGN as evidence of impairment, provided the proper scientific foundation is laid. However, most courts consistently reject any attempt to derive a quantitative estimate of BAC from HGN. Additionally, officers should recognize the relevance of administering the SFSTs in accordance with the NHTSA/IACP guidelines.



Test Your Knowledge

1. If DWI is a criminal offense, the standard of proof is _____.
2. The purpose of implied consent is _____.
3. For the Per Se offense, chemical test result is _____ evidence.
4. The Per Se law makes it unlawful to _____.

DWI DETECTION & SFST

3-22

Slide 22.

Test Your Knowledge

1. If DWI is a criminal offense, the standard of proof is _____.
2. The purpose of implied consent is _____.
3. For the Per Se offense, chemical test result is _____ evidence.
4. The Per Se law makes it unlawful to _____.

4

SFST

Overview of Detection, Note Taking, and Testimony

LEARNING OBJECTIVES

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

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B. DWI Investigation Field Notes	14
C. Courtroom Testimony.....	18

LEARNING ACTIVITIES

- Instructor-Led Presentation
- Reading Assignments



Learning Objectives

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

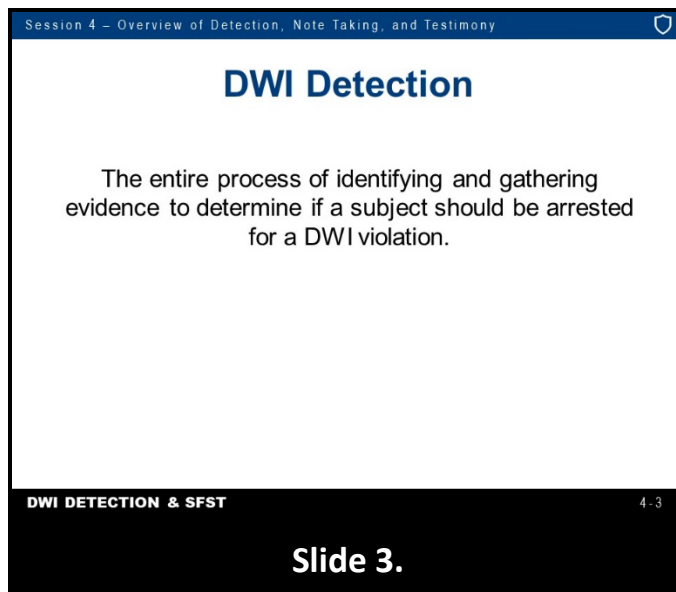


DWI DETECTION & SFST

4-2

Slide 2.

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



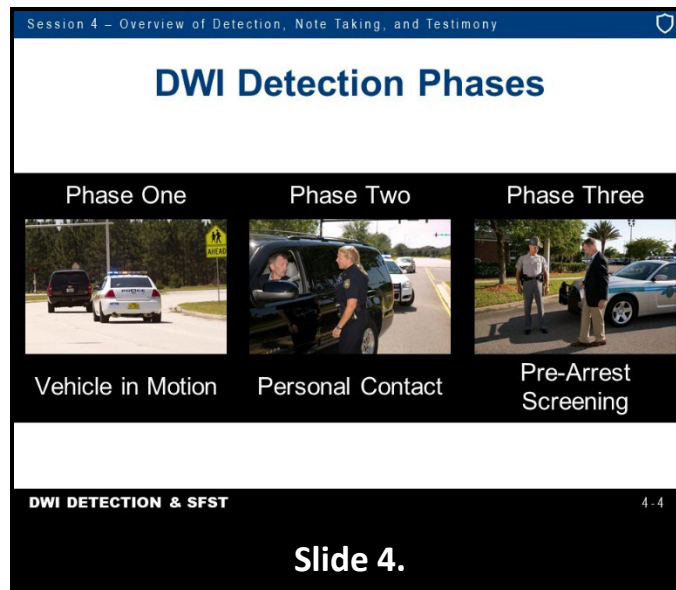
The term DWI detection has been used in many different ways. Consequently, it does not mean the same thing to all law enforcement officers. For the purposes of this training, DWI detection is defined as: The entire process of identifying and gathering evidence to determine if a subject should be arrested for a DWI violation.

Detection begins when the officer develops the first suspicion of a DWI violation.

Detection ends when the officer decides whether or not there is sufficient probable cause to arrest the driver 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, unusual but not necessarily illegal behavior, or almost anything else. Initial detection may carry with it an immediate suspicion the driver is impaired, or a slight suspicion, or even no suspicion at all. In any case, it sets in motion a process wherein you focus on a particular vehicle or individual and have the opportunity to observe that vehicle or individual and to gather additional evidence.

The detection process ends when you decide either to arrest or not to arrest the individual for DWI. That decision is based on all of the evidence that has come to light since your attention was first drawn to the vehicle or individual. 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.

A. Three Phases of Detection



The typical DWI contact involves three separate and distinct phases: Phase One: Vehicle in motion; Phase Two: Personal contact; and, Phase Three: Pre-arrest screening.

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 Standardized Field Sobriety Tests (SFSTs) to the driver to determine impairment.

In addition to SFSTs, some jurisdictions may allow you to administer other field sobriety tests and/or a preliminary breath test (PBT) to demonstrate the association of alcohol with the observable evidence of the subject's impairment. PBTs can be used to assist in making an arrest decision and should rarely be the only factor in deciding to arrest. PBTs should be used after administering SFSTs.

The DWI detection process does not always include all three phases. Sometimes there are DWI detection contacts in which Phase One is absent. These are cases in which you have no opportunity to observe the vehicle in motion. This may occur at the crash scene, at a roadblock or checkpoint, or when you have responded to a request for motorist assistance. Sometimes there are DWI contacts in which Phase Three is absent. There are cases in which you would not administer formal tests to the driver. This may occur when the driver is grossly impaired, badly injured, or refuses to submit to tests.

Session 4 – Overview of Detection, Note Taking, and Testimony

Decisions/Possible Outcomes

Decisions

- Phase One - Stop?
- Phase Two - Exit?
- Phase Three - Arrest?

Possible Outcomes

- Yes - Do it now
- Wait - Look for more evidence
- No - Don't do it



DWI DETECTION & SFST 4-5

Slide 5.

In each of the three phases, there will be decisions and possible outcomes. Each detection phase usually involves two major tasks and one major decision.

Session 4 – Overview of Detection, Note Taking, and Testimony

Decisions

- **Phase One: Vehicle in Motion**
 - Should I stop the vehicle?
- **Phase Two: Personal Contact**
 - Should the driver exit?
- **Phase Three: Pre-arrest Screening**
 - Is there probable cause to arrest the suspect for DWI?



DWI DETECTION & SFST 4-6

Slide 6.

In Phase One: Your first task is to observe the vehicle in operation. Based on this observation, you must decide whether there is sufficient cause to command the driver to stop. Your second task is to observe the stopping sequence. You may want to take a picture of the vehicle or scene especially if the vehicle was involved in a crash.

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

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

Session 4 – Overview of Detection, Note Taking, and Testimony

Possible Outcomes – Yes

- **Phase One:**
Yes, there are reasonable grounds to stop the vehicle
- **Phase Two:**
Yes, there is enough reason to suspect impairment to justify getting the driver out of the vehicle for further investigation
- **Phase Three:**
Yes, there is probable cause to arrest driver for DWI right now



DWI DETECTION & SFST 4-7

Slide 7.

Each of the major decisions can have any one of three different outcomes: Yes - Do it Now; Wait - Look for Additional Evidence; and, No - Don't Do It. Consider the following examples.

Phase One: Yes, there are reasonable grounds to stop the vehicle. Phase Two: Yes, there is enough reason to suspect impairment to justify getting the driver out of the vehicle for further investigation. Phase Three: Yes, there is probable cause to arrest the driver for DWI right now.

Session 4 – Overview of Detection, Note Taking, and Testimony

Possible Outcomes - Wait

- **Phase One:**
Don't stop the vehicle yet
- **Phase Two:**
Don't get the driver out of the car yet
- **Phase Three:**
Don't arrest the driver yet



DWI DETECTION & SFST 4-8

Slide 8.

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.

Session 4 – Overview of Detection, Note Taking, and Testimony

Possible Outcomes - No

- **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



DWI DETECTION & SFST 4-9

Slide 9.

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.

Session 4 – Overview of Detection, Note Taking, and Testimony

Arrest Decision

- 1 Initial observation of vehicle operation
- 2 Observation of the stop
- 3 Face to face observation and interview
- 4 Observation of the exit
- 5 SFSTs
- 6 Preliminary breath test

DWI DETECTION & SFST 4-10

Slide 10.

In each phase of detection, you must determine whether there is sufficient evidence to establish the "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 and to make sure ALL relevant evidence of DWI is gathered.



DWI Detection – Phase One

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



DWI DETECTION & SFST

4-11

Slide 11.

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

Phase One:

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



DWI Detection – Phase Two

- Vehicle approach: What do I see?
- Talking with driver: What do I hear, see, smell?
- How does the driver respond to questions?
- Should I instruct the driver to exit vehicle?
- How does the driver exit?
- When the driver walks toward the side of the road, what do I see?



DWI DETECTION & SFST

4-12

Slide 12.

Phase Two:

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



DWI Detection – Phase Three

- Should I administer SFSTs to the driver?
- How does the driver perform those tests?
- What indicators of impairment did I observe while the driver performed these tests?
- Do I have probable cause to arrest for DWI?
- Should I administer a preliminary breath test?
- What are the results of the preliminary breath test?



DWI DETECTION & SFST

4-13

Slide 13.

Phase Three:

- Should I administer SFSTs to the driver?
 - How does the driver perform those tests?
 - What indicators of impairment did I observe while the driver performed these tests?
 - Do I have probable cause to arrest for DWI?
 - Should I administer a preliminary breath test?
 - What are the results of the preliminary breath test?
-

Session 4 – Overview of Detection, Note Taking, and Testimony

Successful DWI Detection

- Know what to observe
- Ask the right kinds of questions
- Use the right kinds of tests
- Interpret, document, and articulate all observations thoroughly
- Be motivated and apply your knowledge and skills

DWI DETECTION & SFST 4-14

Slide 14.

The most successful DWI detectors are those officers who:

- Know what to observe
 - Ask the right kinds of questions
 - Use the right kinds of tests
 - Interpret, document, and articulate all observations thoroughly
 - Be motivated and apply your knowledge and skills
-

Session 4 – Overview of Detection, Note Taking, and Testimony

Note Taking and Testimony

- Graphically describe your observations
- Convey evidence clearly and convincingly
- Importance of field notes

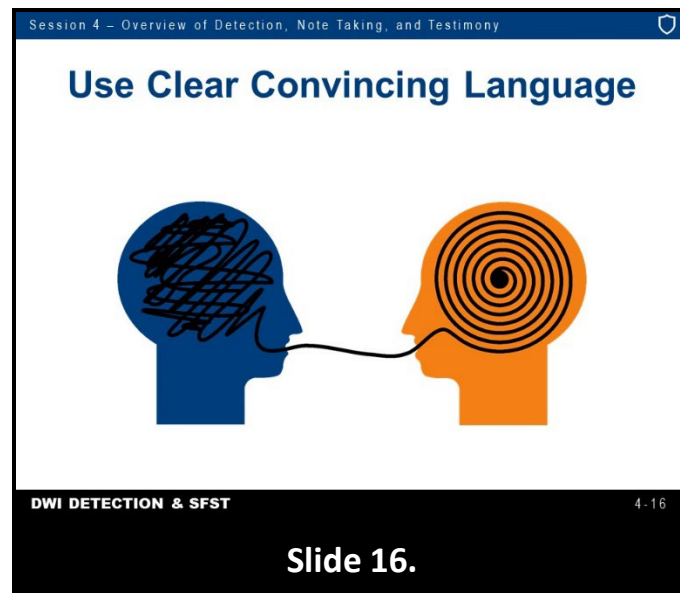


DWI DETECTION & SFST 4-15

Slide 15.

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 or articulating 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 who select the most appropriate terminology for both written reports and courtroom testimony will be better able to communicate clearly and convincingly, making DWI prosecution more successful.



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 an inaccurate picture of what happened. Clear and complete field notes help in preparation for your testimony.

Session 4 – Overview of Detection, Note Taking, and Testimony

Vague	Clear
• Made an illegal left turn on Jefferson	• From Main, turned left (north bound) on Jefferson, which is one way south bound
• Drove erratically	• Weaving from side to side. Crossed center line twice and drove on shoulder three times
• Driver appeared drunk, shaking	• Driver's eyes bloodshot; gaze fixed; Strong odor of alcoholic beverage on driver's breath

DWI DETECTION & SFST 4-17

Slide 17.

Session 4 – Overview of Detection, Note Taking, and Testimony

Vague	Clear
• Vehicle stopped in unusual fashion	• Vehicle struck, climbed curb; stopped on sidewalk
• Vehicle crossed the center line	• Vehicle drifted completely into the opposing traffic lane

DWI DETECTION & SFST 4-18

Slide 18.

Consider these examples.

B. DWI Investigation Field Notes

Session 4 – Overview of Detection, Note Taking, and Testimony

Officer Must Be Able To

- Recognize and interpret DWI evidence
- Describe the evidence clearly and convincingly



DWI DETECTION & SFST4-19

Slide 19.

One of the most critical tasks in the DWI enforcement process is the recognition and documentation of facts and clues that establish legal grounds to stop, investigate, and subsequently arrest persons suspected of DWI. The evidence gathered during the detection process must establish the elements of the violation and must be completely documented to support successful prosecution of the defendant. 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 completely document your 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 base 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.

Session 4 – Overview of Detection, Note Taking, and Testimony

Observations - Short-Lived Evidence

FIELD NOTE-TAKING GUIDE

I. NAME

SEX

RACE

ADDRESS

CITY/STATE

OP. LIC. NO.

D.O.B.

SOC. SEC. #

YEAR

LIC.

STATE

VEHICLE MAKE

NO. PASSENGERS

DISPOSITION

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 EFFECTS/DRUGS OR MEDICATIONS USED

IV. PRE-ARREST SCREENING

Equal Pupils

☐ Yes
☐ No

Equal Tracking

☐ Yes
☐ No

Rolling Nystagmus

☐ Yes
☐ No

Other

☐ Yes
☐ No

LACK OF SMOOTH PURSUIT

☐ Yes
☐ No

DISTINCT AND SUSTAINED NYSTAGMUS AT MAX DEV

☐ Yes
☐ No

ONSET OF NYSTAGMUS PRIOR TO 45 DEGREES

☐ Yes
☐ No

VERTICAL NYSTAGMUS

☐ Yes
☐ No

HORIZONTAL GAZE NYSTAGMUS

Left

Right

DWI DETECTION & SFST

4-20

Slide 20.

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 of the detection process and ensures vital evidence is documented. The field notes provide the information necessary to complete 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.

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

Session 4 – Overview of Detection, Note Taking, and Testimony

Field Note-Taking Guide

I. NAME

SEX

RACE

ADDRESS

CITY/STATE

OP. LIC. NO.

D.O.B.

SOC. SEC. #

YEAR

LIC.

STATE

VEHICLE MAKE

NO. PASSENGERS

DISPOSITION

INCIDENT LOCATION

DATE

TIME

CRASH

YES

NO

II. VEHICLE IN MOTION

INITIAL OBSERVATIONS

OBSERVATION OF STOP

DWI DETECTION & SFST

4-21

Slide 21.

Section I provides space to record basic information describing the subject, vehicle, location, and 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.

Session 4 – Overview of Detection, Note Taking, and Testimony

Field Note-Taking Guide

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 _____

DWI DETECTION & SFST 4-22

Slide 22.

Section III provides space to record brief descriptions of the personal contact with the subject (Detection Phase Two) including observations of the driver. General Observations provides space to record the subject's manner of speech, attitude, clothing, etc. Any physical evidence collected should also be noted in this section.

Session 4 – Overview of Detection, Note Taking, and Testimony

Field Note-Taking Guide

IV. PRE-ARREST SCREENING

HORIZONTAL GAZE NYSTAGMUS

Equal Pupils ☐ Yes ☐ No ☐ LACK OF SMOOTH PURSUIT

Equal Tracking ☐ Yes ☐ No ☐ DISTINCT AND SUSTAINED NYSTAGMUS AT MAX DEV

Resting Nystagmus ☐ Yes ☐ No ☐ ONSET OF NYSTAGMUS PRIOR TO 45 DEGREES

Other _____ ☐ VERTICAL NYSTAGMUS ☐ Yes ☐ No

WALK AND TURN

INSTRUCTION STAGE

CANNOT KEEP BALANCE ☐

STARTS TOO SOON ☐

WALKING STAGE

STOPS WALKING

MISSSES HEEL-TO-TOE

STEPS OFF LINE

USES ARM(S) TO BALANCE

ACTUAL STEPS TAKEN

IMPROPER TURN (Describe) _____

CANNOT COMPLETE TEST (Explain) _____

OTHER: _____

DWI DETECTION & SFST 4-23

Slide 23.

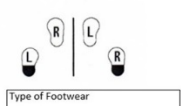
Session 4 – Overview of Detection, Note Taking, and Testimony

Field Note-Taking Guide

ONE LEG STAND

L	R

Sways while balancing
 Uses arm(s) 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: _____

DWI DETECTION & SFST 4-24

Slide 24.

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

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

Since this is a note-taking guide and space is limited, you will have to develop your own "shorthand" system. Your notes should be detailed and descriptive of the facts, circumstances, or events being described. These notes may be used to refresh your memory and to write the narrative report documenting your observations to testify in court.

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

C. Courtroom Testimony

Session 4 – Overview of Detection, Note Taking, and Testimony

Preparing Testimony

At time of incident:

- Recognize evidence
- Compile notes
- Prepare report



DWI DETECTION & SFST 4-25

Slide 25.

Testimonial evidence in DWI cases establishes the defendant was, in fact, the driver and was under the influence. Your testimony should be clear, detailed, and concise. Preparation for trial is done both at the scene and prior to trial. To be effective, testimonial evidence must be clear and convincing. The first requirement for effective testimony is preparation. Testimony preparation begins at the time of the DWI incident. From the very beginning of the DWI contact, it is your responsibility to recognize significant evidence, compile complete, accurate field notes, and prepare a complete, accurate, detailed report.

Session 4 – Overview of Detection, Note Taking, and Testimony

Preparing Testimony

Prior to trial:

- Review paperwork
- Review other evidence
- Mentally organize elements, evidence, and testimony
- Identify potential issues
- Discuss with prosecutor



DWI DETECTION & SFST 4-26

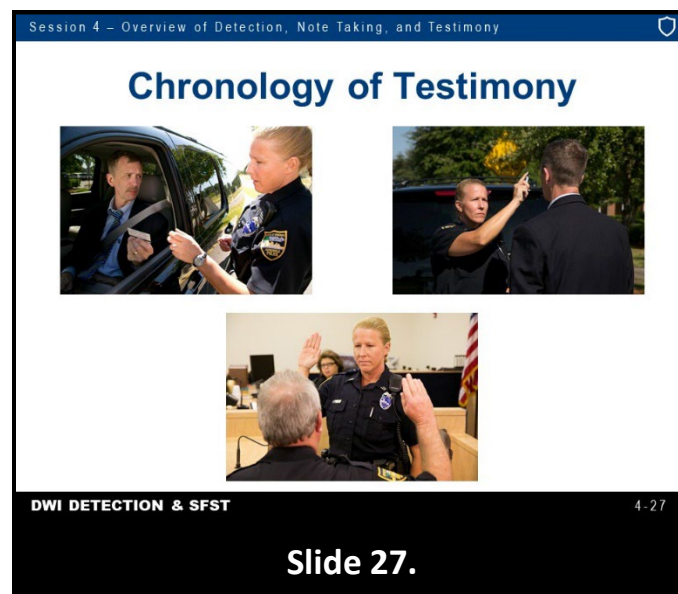
Slide 26.

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

- Review field notes, incident report, narrative, and other paperwork
- Review other evidence, i.e., video, photographs, etc.

- Mentally organize elements of offense and the evidence available to prove each element
- Mentally organize testimony to convey observations clearly and convincingly
- Identify weak spots and/or potential issues with the case and decide how to address those issues
- Discuss the case with the prosecutor

The foundation for preparation and successful testimony is the relationship between the law enforcement officer(s) involved with the arrest and the prosecuting attorney(s) associated with the case. Effective communication and a clear understanding of each groups' objectives and expectations is essential for successful prosecution.



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

Phase One: Vehicle in Motion – initial observation of vehicle, the driver, or both including what first attracted your attention to the vehicle/driver and details about the driving before you initiated the traffic stop. Reinforcing cues, maneuvers, or actions observed after signaling the driver to stop but before driver's vehicle came to a complete stop.

A “cue” is defined as a reminder or prompting as a signal to do something.

Phase Two: Personal Contact – face to face observations including personal appearance, statements, and other evidence obtained during your initial contact with driver.

A “clue” is defined as something that leads to the solution of a problem.

Phase Three: Pre-arrest Screening – sobriety tests administered to the driver and the results of any preliminary breath tests (if applicable).

Session 4 – Overview of Detection, Note Taking, and Testimony

Chronology of Testimony

Arrest and post arrest observations:

- Arrest procedures and admonitions
- Defendant's actions and statements
- Post arrest observations
- Request for chemical test(s)
- Administration and results of chemical test(s)
- Interview

DWI DETECTION & SFST 4-28

Slide 28.

Arrest and Post Arrest Observations

- The arrest itself including procedures used to inform driver of arrest, admonish subject of rights, and so on
 - Defendant's actions, statements, and/or admissions subsequent to the arrest
 - Observation of defendant subsequent to the arrest including not just what the defendant said but actions and reactions
 - The request for the chemical test including the procedures used, admonition of rights and requirements, and so on
 - The conduct, actions, reactions, and results of the chemical test if you were also the testing officer
 - The interview of the defendant, including any new observations, statements, and/or admissions.
-

Session 4 – Overview of Detection, Note Taking, and Testimony

Questions?

DWI DETECTION & SFST 4-29

Slide 29.

Session 4 – Overview of Detection, Note Taking, and Testimony

Test Your Knowledge

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 _____

DWI DETECTION & SFST 4-30

Slide 30.

Test Your Knowledge

1. DWI detection is defined as _____
 2. The three phases in a typical DWI contact are:
 - A. Phase One _____
 - B. Phase Two _____
 - C. Phase Three _____
 3. In Phase One, the officer usually has an opportunity to _____
-

Session 4 – Overview of Detection, Note Taking, and Testimony

Test Your Knowledge

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 _____.

DWI DETECTION & SFST 4-31

Slide 31.

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:

-

Session 4 – Overview of Detection, Note Taking, and Testimony

Test Your Knowledge

7. At each phase of detection, the officer must determine _____
8. Evidence of DWI is largely _____ in nature
9. Law enforcement officers need a system and tools for recording field notes at scenes of DWI investigations because DWI evidence is _____.

Slide 32.

7. At each phase of detection, the officer must determine _____
8. Evidence of DWI is largely _____ in nature.
9. Law enforcement officers need a system and tools for recording field notes at scenes of DWI investigations because DWI evidence is _____.

Session 4 – Overview of Detection, Note Taking, and Testimony

Test Your Knowledge

10. Testimony preparations begins _____
11. List two things the officer should do to prepare testimony just before the trial.
12. In court, the officer's testimony should be organized _____.

Slide 33.

10. Testimony preparations begins _____
11. List two things the officer should do to prepare testimony just before the trial.
 - A. _____
 - B. _____
 - C. _____
 - D. _____
 - E. _____
12. In court, the officer's testimony should be organized _____

FIELD NOTE-TAKING GUIDE

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

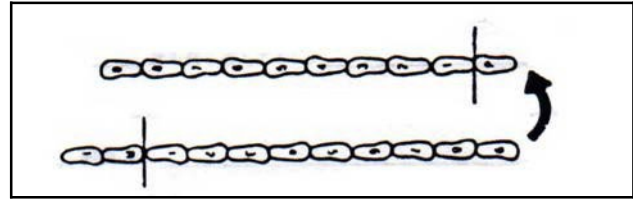
Equal Pupils ☐ Yes ☐ No ✱ LACK OF SMOOTH PURSUIT
Equal Tracking ☐ Yes ☐ No ✱ DISTINCT AND SUSTAINED NYSTAGMUS AT MAX DEV
Resting Nystagmus ☐ Yes ☐ No ✱ ONSET OF NYSTAGMUS PRIOR TO 45 DEGREES
Other _____ ✱ VERTICAL NYSTAGMUS ☐ Yes ☐ No

LEFT	RIGHT

WALK AND TURN

INSTRUCTION STAGE

CANNOT KEEP BALANCE
STARTS TOO SOON



WALKING STAGE

STOPS WALKING
MISSES HEEL-TO-TOE
STEPS OFF LINE
USES ARM(S) TO BALANCE
ACTUAL STEPS TAKEN

FIRST NINE STEPS

SECOND NINE STEPS

IMPROPER TURN (Describe) _____

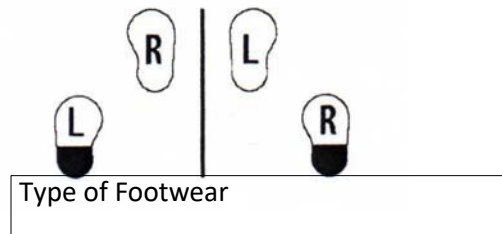
CANNOT COMPLETE TEST (EXPLAIN) _____

OTHER: _____

ONE LEG STAND

L	R

Sways while balancing
Uses arm(s) to balance
Hopping
Puts foot down



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: _____

5 SFST

Phase One: Vehicle in Motion

LEARNING OBJECTIVES

- Identify typical cues of Detection Phase One
- Describe the observed cues clearly and convincingly
- Understand the significance of the problem of impaired motorcycle riders
- Obtain the skills necessary to detect, arrest, and prosecute alcohol- and drug-impaired motorcyclists

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E. Typical Reinforcing Cues of the Stopping Sequence.....	18
F. Recognition and Description of Initial and Reinforcing Cues	20

LEARNING ACTIVITIES

- Instructor-Led Presentations
- Video Presentation
- Instructor-Led Demonstrations
- Participants Presentations



Learning Objectives

- Identify typical cues of Detection Phase One
- Describe observed cues clearly and convincingly
- Understand significance of the impaired motorcycle rider's problem
- Obtain skills necessary to detect, arrest, and prosecute alcohol- and drug-impaired motorcyclists

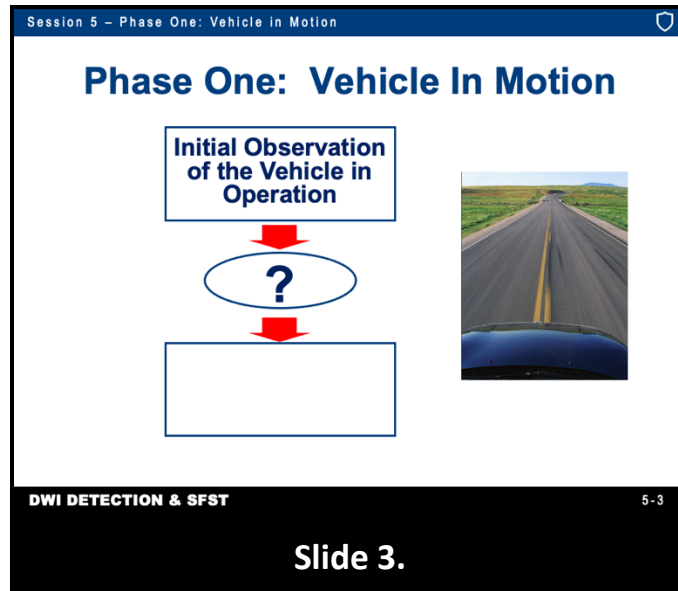


DWI DETECTION & SFST

5-2

Slide 2.

A. Overview: Tasks and Decision



Your first task in Phase One: Vehicle in Motion is to observe the vehicle in operation and to note any initial cues of a possible DWI violation. At this point you must decide whether there is reasonable suspicion to stop the vehicle; either to conduct further investigation to determine if the driver may be impaired or for another traffic violation. You are not committed to arresting the driver 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 driver 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 a slower than normal speed
- 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: (1) Stop the vehicle; (2) Continue to observe the vehicle; (3) Disregard the vehicle.

Session 5 – Phase One: Vehicle in Motion

Phase One: Vehicle In Motion

```
graph TD; A[Initial Observation of the Vehicle in Operation] --> B((?)); B --> C[Observation of the Stop];
```

Should I Stop the Vehicle?

Observation of the Stop

DWI DETECTION & SFST 5-4

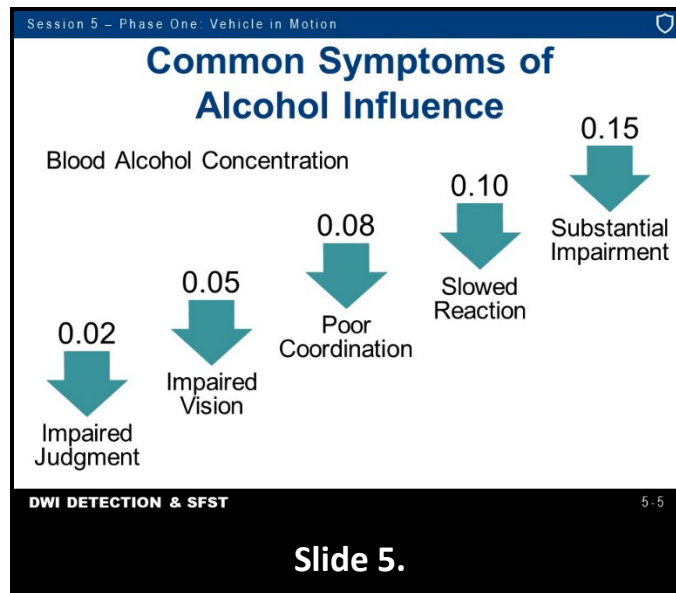
Slide 4.

Alternatives to stopping the vehicle include delaying the stop/no stop decision in order to continue observing the vehicle and/or disregarding the vehicle.

Whenever there is a valid reason to stop a vehicle, the officer should be alert to the possibility the driver may be impaired by alcohol and/or other drugs. Once the stop command has been communicated to the suspect driver, the officer must closely observe the driver's actions and vehicle maneuvers during the stopping sequence.

Sometimes significant evidence of alcohol influence comes to light during the stopping sequence. In some cases, the stopping sequence might produce the first suspicion of DWI. Drivers impaired by alcohol and/or other drugs may respond in unexpected and dangerous ways to the stop command.

B. Initial Observations: Visual Cues of Impaired Operations (Automobiles)

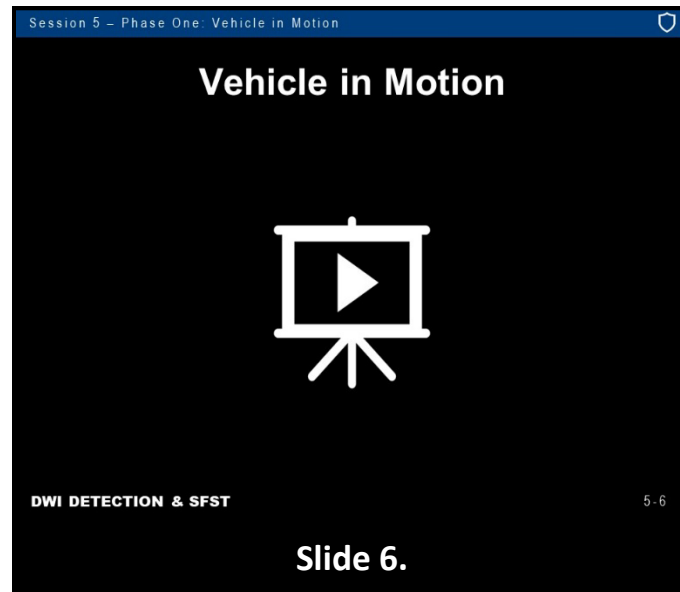


Blood Alcohol Concentration (BAC) ¹	Typical Effects	Predictable Effects on Driving
.02	- Some loss of judgment - Relaxation - Slight body warmth - Altered mood	- Decline in visual functions (rapid tracking of a moving target) - Decline in ability to perform two tasks at the same time (divided attention)
.05	- Exaggerated behavior - May have loss of small- muscle control (e.g., focusing your eyes) - Impaired judgment - Usually good feeling - Lowered alertness - Release of inhibition	- Reduced coordination - Reduced ability to track moving objects - Difficulty steering - Reduced response to emergency driving situation
.08	- Muscle coordination becomes poor (e.g., balance, speech, vision, reaction time, and hearing) - Harder to detect danger - Impaired judgment, self-control, reasoning, and memory	- Concentration - Short term memory loss - Speed control - Reduced information processing capability (e.g., signal detection, visual search) - Impaired perception
.10	- Clear deterioration of reaction time and control - Slurred speech, poor coordination, and slowed thinking	Reduced ability to maintain lane position and brake appropriately
.15	- Far less muscle control than normal - Vomiting may occur (unless this level is reached slowly or a person has developed a high tolerance for alcohol) - Significant loss of balance	Substantial impairment in vehicle control, attention to driving task, and in necessary visual and auditory information processing

¹Information in this table shows the BAC level at which the effect usually is first observed, and has been gathered from a variety of sources including the National Highway Traffic Safety Administration, the National Institute on Alcohol Abuse and Alcoholism, the American Medical Association, and www.webMD.com.

Drivers who are impaired frequently exhibit certain effects or symptoms of impairment. These include slowed reactions, impaired judgment as evidenced by a willingness to take risks, impaired vision, and poor coordination.

Below 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 whether the driver is impaired by alcohol and/or drugs, the law enforcement detection process is the same and the offense is still DWI.



The common effects of alcohol on the driver's mental and physical faculties lead to predictable driving violations and vehicle operating characteristics. The National Highway Traffic Safety Administration (NHTSA) sponsored research to identify the most common and reliable initial indicators of DWI. This research identified 24 cues, each with an associated high probability the driver exhibiting the cue is *impaired*. These cues and their associated probabilities are described in the NHTSA publication, The Visual Detection of DWI Motorists. They also are discussed in Vehicle in Motion, a video sponsored by NHTSA to assist law enforcement officers to recognize DWI detection cues.

The Visual Detection of DWI Motorists is located in the Participant Manual.

Source:

Stuster, J. (1997). *The Detection of DWI at BACs Below 0.10*. (Final Rep. DOT-HS-808-654). Santa Barbara, CA: Anacapa Sciences, Inc.

NHTSA sponsored research to identify the most common and reliable initial indicators of DWI. Research identified 100 cues, each providing a high probability indication the driver is *under the influence*.

The list was reduced to 24 cues during three field studies involving hundreds of officers and more than 12,000 enforcement stops.

Session 5 – Phase One: Vehicle in Motion

Most Common and Reliable Initial Indicators of DWI

- Problems in maintaining proper lane position
- Speed and braking problems
- Vigilance problems
- Judgment problems



DWI DETECTION & SFST 5-7

Slide 7.

The driving behaviors are presented in four categories: (1) Problems in maintaining proper lane position; (2) Speed and braking problems; (3) Vigilance problems; and, (4) Judgment problems.

Session 5 – Phase One: Vehicle in Motion

Problems Maintaining Proper Lane Position

- Weaving
- Weaving across lane line
- Drifting
- Straddling a lane line
- Swerving
- Almost striking object or vehicle
- Turning with a wide radius



DWI DETECTION & SFST 5-8

Slide 8.

There is a brochure published by NHTSA that contains these cues. The title is “The Visual Detection of DWI Motorists” DOT HS 808 677. See Attachment at the end of this session. The first category is Problems in maintaining proper lane position. [p=.50-.75]

- Weaving
- Weaving across lane lines (lane departure)
- Drifting

- Straddling a lane line
 - Swerving
 - Almost striking object or vehicle
 - Turning with a wide radius
-

Session 5 – Phase One: Vehicle in Motion

Speed and Braking Problems

- Stopping problems
- Unnecessary acceleration or deceleration
- Varying speed
- 10 mph or more under the speed limit



DWI DETECTION & SFST5-9

Slide 9.

Speed and braking problems. [p=.45-.70]

- Stopping problems (too far, too short, or too jerky)
 - Unnecessary acceleration or deceleration
 - Varying speed
 - 10 mph or more under the speed limit
-

Session 5 – Phase One: Vehicle in Motion

Vigilance Problems

- Driving without headlights at night
- Failure to signal
- Driving wrong way
- Slow response to traffic/officer's signals
- Stopping in lane for no apparent reason



DWI DETECTION & SFST 5-10

Slide 10.

The third problem is vigilance problems. [P=.55-.65]. This category includes, but is not limited to:

- Driving without headlights at night
 - Failure to signal or signal inconsistent with action
 - 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
-



Judgment Problems

- Following too closely
- Improper lane change/turn
- Driving on other than designated roadway
- Stopping inappropriately in response to officer
- Inappropriate or unusual behavior
- Appearing to be impaired



DWI DETECTION & SFST

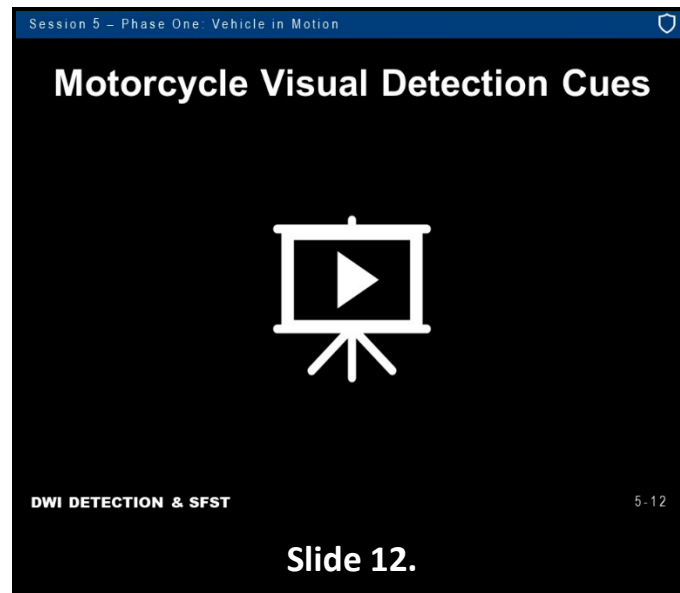
5-11

Slide 11.

Judgment problems. [P=.35-.90]

- Following too closely (tailgating)
- Improper or unsafe lane change
- Illegal or improper turn
- Driving on other than designated roadway
- Stopping inappropriately in response to officer
- Inappropriate or unusual behavior (throwing objects, arguing, etc.)
- Appearing to be impaired

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



NHTSA estimated in 2020, 27 percent of all motorcycle riders killed were involved in alcohol-impaired crashes.

Sources:

National Center for Statistics and Analysis. (2020). *Motorcycles: 2020 Data*. (Traffic Safety Facts. Report No. DOT HS 813 294). Washington D.C.: National Highway Traffic Safety Administration.

Stuster, J. (1993). *The Detection of DWI Motorcyclists*. (Final Rep. DOT-HS-807-839). Santa Barbara, CA: Anacapa Sciences, Inc.

NHTSA sponsored research to develop a set of behavioral cues to be used by law enforcement personnel to detect motorcyclists who are operating their vehicles while impaired. These cues can be used both day and night. These cues have been labeled as Excellent Predictors and Good Predictors.

Session 5 – Phase One: Vehicle in Motion

Motorcycle DUI Detection Guide

Excellent Cues (50% or Greater Probability)

- Drifting during turn or curve
- Trouble with dismount/balance at a stop
- Turning problems
- Inattentive to surroundings
- Inappropriate or unusual behavior
- Weaving



DWI DETECTION & SFST 5-13

Slide 13.

Research has identified driving impairment cues for motorcyclists.

The Detection of DWI Motorcyclists is located in the Participant Manual.

Source:

(2013, March). *The Detection of DWI Motorcyclists*. (Publication: DOT HS 807 856). Washington, D.C.: National Highway Traffic Safety Administration.

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
-



Motorcycle DUI Detection Guide

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
- Traveling wrong way



DWI DETECTION & SFST

5-14

Slide 14.

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
 - Traveling wrong way
-



Elements of the Driving Task



DWI DETECTION & SFST

5-15

Slide 15.

Driving is a complex task, composed of many parts.

- Steering
 - Controlling accelerator
 - Signaling
 - Controlling brake pedal
 - Operating clutch (if applicable)
 - Operating gearshift (if applicable)
 - Observing other traffic
 - Observing signal lights, stop signs, other traffic control devices
 - Making decisions (whether to stop, turn, speed up, slow down, etc.)
 - Many other things
-

Session 5 – Phase One: Vehicle in Motion

Safe Driving Demands



Safe driving demands the ability to divide attention among numerous simultaneous tasks.

DWI DETECTION & SFST 5-16

Slide 16.

In order to drive safely, a driver must be able to divide attention among all of these various activities. Under the influence of alcohol or many drugs, a person's ability to divide attention becomes impaired. The impaired driver tends to concentrate on certain parts of driving and to disregard other parts.

- Alcohol has impaired ability to divide attention
- Driver is concentrating on steering and controlling the accelerator and brake
- Does not respond to the particular color of the traffic 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.

D. Recognition and Description of Initial Cues

Session 5 – Phase One: Vehicle in Motion

Vehicle In Motion Initial Cues

What do you see?

- Moving violation
- Equipment violation
- Other violation
- Unusual operation
- Anything else

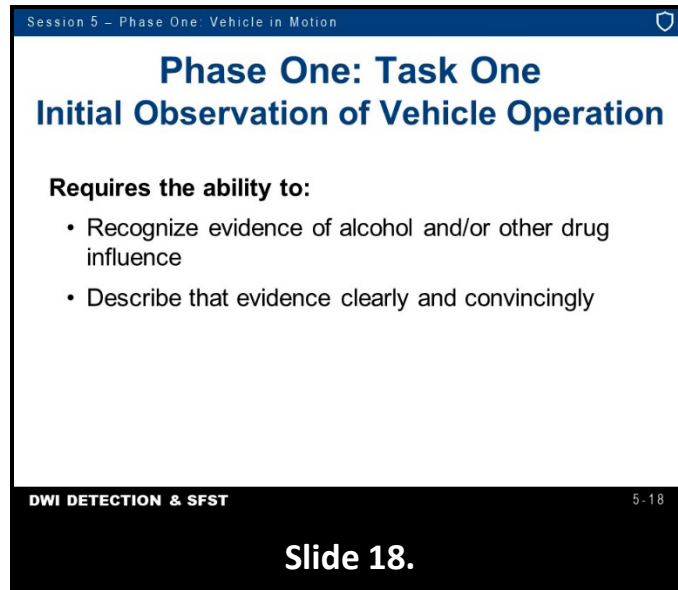
DWI DETECTION & SFST 5-17

Slide 17.

What do you see?

Moving violation

- Equipment violation
 - Other violation
 - Unusual operation
 - Anything else (suspicious location, motorists assist)
-



Session 5 – Phase One: Vehicle in Motion

Phase One: Task One

Initial Observation of Vehicle Operation

Requires the ability to:

- Recognize evidence of alcohol and/or other drug influence
- Describe that evidence clearly and convincingly

DWI DETECTION & SFST 5-18

Slide 18.

The task of making initial observations of vehicle operation is the first step in the job of DWI detection. Proper performance of that task demands two distinct but related abilities: Ability to recognize evidence of alcohol and/or other drug influence and Ability to describe that evidence clearly and convincingly.

It is not enough a police officer observe and recognize symptoms of impaired driving. The officer must be able to articulate what was observed so a judge or jury will have a clear mental image of exactly what took place.

Improving the ability to recognize and clearly describe observational evidence requires practice. It isn't practical to have impaired drivers actually drive through the classroom. The next best thing is to use video to portray typical DWI detection contacts.

Session 5 – Phase One: Vehicle in Motion

Procedures for Practicing Cue Recognition and Description

- View DWI violation videos
- Take notes
- Testify
 - Choose words carefully
 - Provide as much detail as possible
 - Construct accurate image of observations
- Critique testimony

DWI DETECTION & SFST 5-19

Slide 19.

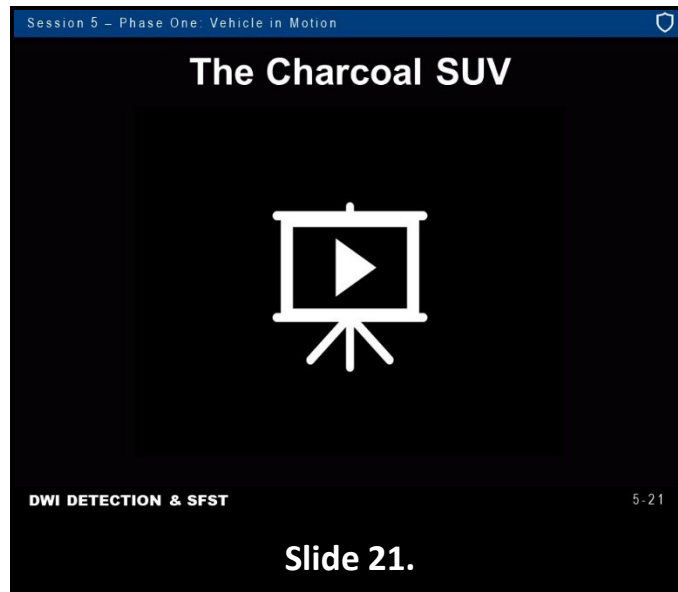
Session 5 – Phase One: Vehicle in Motion

Leaving the Shopping Center

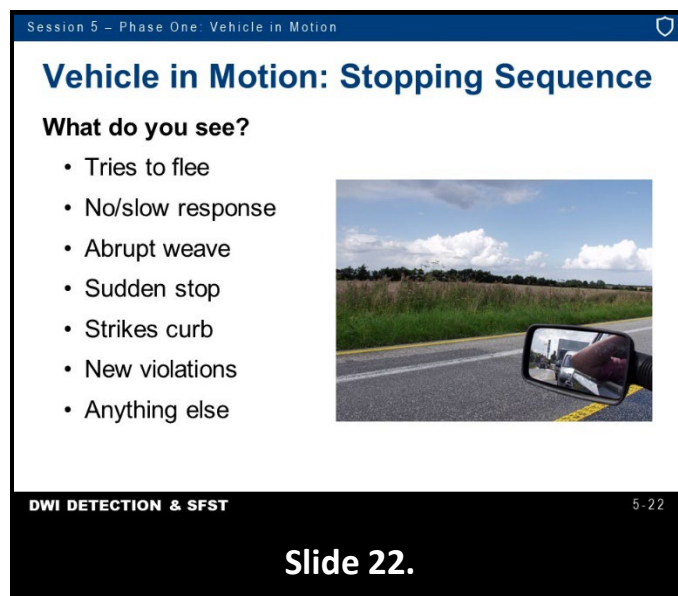


DWI DETECTION & SFST 5-20

Slide 20.



E. Typical Reinforcing Cues of the Stopping Sequence



After the command to stop is given, the alcohol-impaired driver may exhibit additional important evidence of DWI.

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 to which the driver must devote some attention, i.e., emergency flashing lights, siren, etc., that demand and divert the subject's attention.

Signal to stop requires the driver to turn the steering wheel, operate the brake pedal, activate the signal light, etc. As soon as an officer gives the stop command, the subject's driving task becomes more complex. If subject is under the influence, the subject may not be able to handle this more complex driving very well.

Session 5 – Phase One: Vehicle in Motion

Phase One: Task Two

Observation of the Stop

Requires the ability to:

- Recognize evidence of alcohol and/or other drug influence
- Describe that evidence clearly and convincingly

DWI DETECTION & SFST

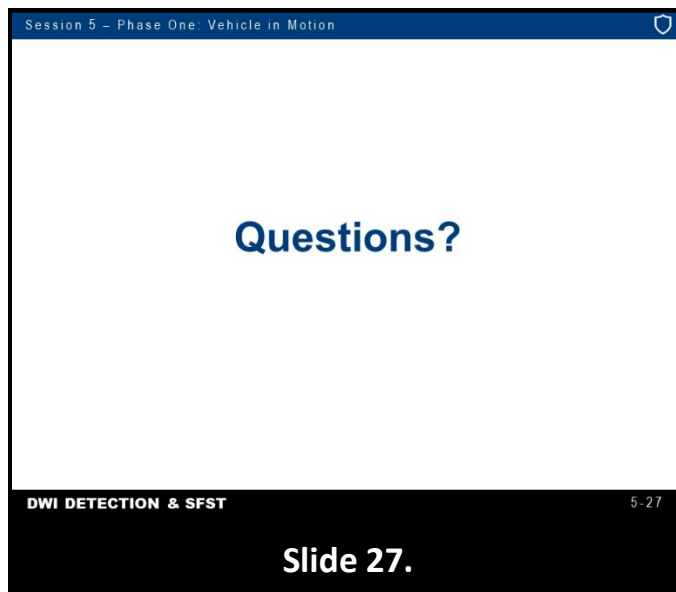
5-23

Slide 23.

It is the officer's responsibility to capture and convey the additional evidence of impairment that may be exhibited during the stopping sequence. This requires ability to recognize evidence of alcohol and/or other drug influence and requires ability to describe that evidence clearly and convincingly.

F. Recognition and Description of Initial and Reinforcing Cues





Session 5 – Phase One: Vehicle in Motion

Test Your Knowledge

1. The Phase One tasks are _____
2. Two common symptoms of impairment are:
 - A. _____
 - B. _____

DWI DETECTION & SFST 5-28

Slide 28.

Test Your Knowledge

1. The Phase One tasks are _____
 2. Two common symptoms of impairment are: _____
-

Session 5 – Phase One: Vehicle in Motion

Test Your Knowledge

3. Alcohol impairs the ability to _____ among tasks
4. Three clues reinforcing the suspicion of DWI which may be observed during the stopping sequence are:
 - A. _____
 - B. _____
 - C. _____

DWI DETECTION & SFST 5-29

Slide 29.

3. Alcohol impairs the ability to _____ among tasks.
 4. Three clues reinforcing the suspicion of DWI which may be observed during the stopping sequence are: _____
-

Placeholder for The Visual Detection of DWI Motorists

Placeholder for The Detection of DWI Motorcyclists

The Visual Detection of DWI Motorists



The Visual Detection of DWI Motorists



U.S. Department of Transportation
**National Highway Traffic Safety
Administration**



DOT HS 808 677

INTRODUCTION

More than a 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 the National Highway Traffic Safety Administration (NHTSA).

During the late 1960's and early 1970's more than 50,000 people lost their lives each year on our nation's streets, roads and highways. Traffic safety has improved considerably since that time: the annual death toll has declined substantially, even though the numbers of drivers, vehicles, and miles driven all have increased. When miles traveled are considered, the likelihood of being killed in traffic during the 1960's was three to four times what it is today.

The proportion of all crashes in which alcohol is involved also has declined. The declines in crash risk and the numbers of alcohol-involved crashes are attributable to several factors, including the effectiveness of public information and education programs, traffic safety legislation, a general aging of the population, and law enforcement efforts.

NHTSA research contributed to the improved condition, in part, by providing law enforcement officers with useful and scientifically valid information concerning the behaviors that are most predictive of impairment. Continued enforcement of Driving While Intoxicated (DWI) laws will be a key to saving lives in the future. For this reason, NHTSA sponsored research leading to the development of a new DWI detection guide and training materials, including a new training video. Many things have changed since 1979, but like the original training materials, the new detection guide describes a set of behaviors that can be used by officers to detect motorists who are likely to be driving while impaired.

Building upon the previous NHTSA study, researchers interviewed officers from across the United States and developed a list of more than 100 driving cues that have been found to predict blood alcohol concentrations (BAC) of 0.08 percent or greater. The list was reduced to 24 cues during 3 field studies involving hundreds of officers and more than 12,000 enforcement stops. The driving behaviors identified by the officers are presented in the following four categories:

- 1) Problems in maintaining proper lane position**
- 2) Speed and braking problems**
- 3) Vigilance problems**
- 4) Judgment problems**

The cues presented in these categories predict that a driver is DWI at least 35 percent of the time. For example, if you observe a driver to be weaving or weaving across lane lines, the probability of DWI is more than .50 or 50 percent. However, if you observe either of the weaving cues and any other cue listed in this booklet, the probability of DWI jumps to at least .65 or 65 percent. Observing any two cues other than weaving indicates a probability of DWI of at least 50 percent. Some cues, such as swerving, accelerating for no reason, and driving on other than the designated roadway, have single-cue probabilities greater than 70 percent. Generally, the probability of DWI increases substantially when a driver exhibits more than one of the cues.

This booklet contains:

- **The DWI Detection Guide**
- **A summary of the research that led to the guide**
- **Explanations of the 24 driving cues**
- **A description of post-stop cues that are predictive of DWI**

The research suggests that these training materials will be helpful to officers in:

- **Detecting impaired motorists**
- **Articulating observed behaviors on arrest reports**
- **Supporting officers' expert testimony**

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 or officer must repeat
- Providing 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 3 percent (.03).

PROBLEMS IN MAINTAINING PROPER LANE POSITION

Maintaining proper lane position can be a difficult task for an impaired driver. For example, we have all, at one time, seen vehicles **weaving**. Weaving is when the vehicle alternately moves toward one side of the lane and then the other. The pattern of lateral movement can be fairly regular, as one steering correction is closely followed by another. In extreme cases, the vehicle's wheels even **cross the lane lines** before a correction is made. You might even observe a vehicle **straddling a center or lane line**. That is, the vehicle is moving straight ahead with either the right or left tires on the wrong side of the lane line or markers.



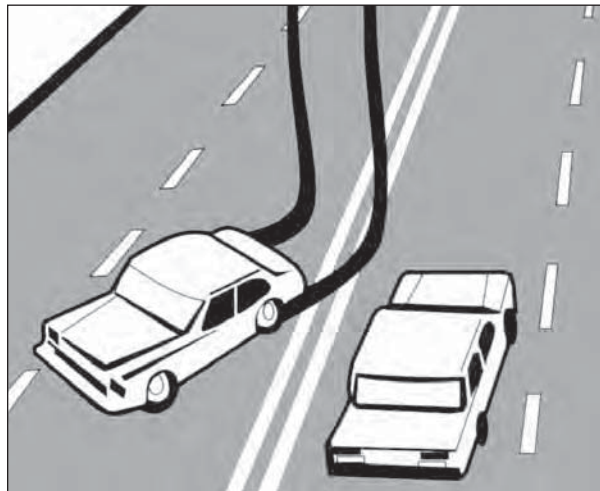
Weaving

Drifting is when a vehicle is moving in a generally straight line, but at a slight angle to the lane. The driver might correct his or her course as the vehicle approaches a lane line or other boundary or fail to correct until after a boundary has been crossed. In extreme cases, the driver fails to correct in time to avoid a collision.



Drifting

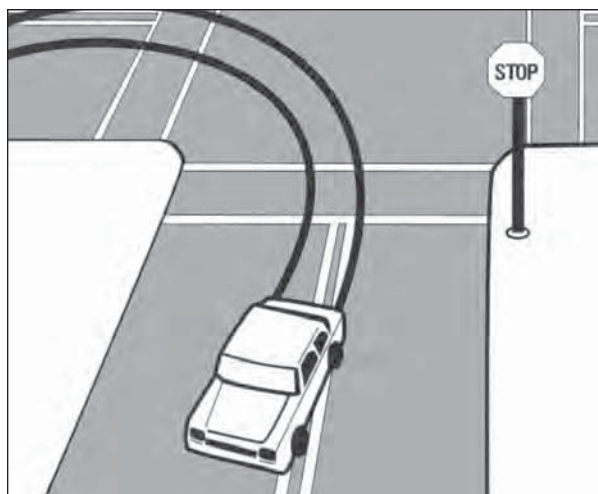
Course corrections can be gradual or abrupt. For example, you might observe a vehicle to **swerve**, making an abrupt turn away from a generally straight course, when a driver realizes that he or she has drifted out of proper lane position or to avoid a previously unnoticed hazard.



Swerving

A related DWI cue is **almost striking a vehicle or other object**. You might observe a vehicle, either at slow speeds or moving with traffic, to pass unusually close to a sign, barrier, building, or other object. This cue also includes almost striking another vehicle, either moving or parked, and causing another vehicle to maneuver to avoid a collision.

Turning with a wide radius or drifting during a curve is the final cue in this category of driver behaviors. A vehicle appears to drift to the outside of the lane or into another lane through the curve or while turning a corner. Watch for this cue, and stop the driver when you see it. Many alcohol-involved crashes are caused by an expanding turn radius or drifting out of lane position during a curve.

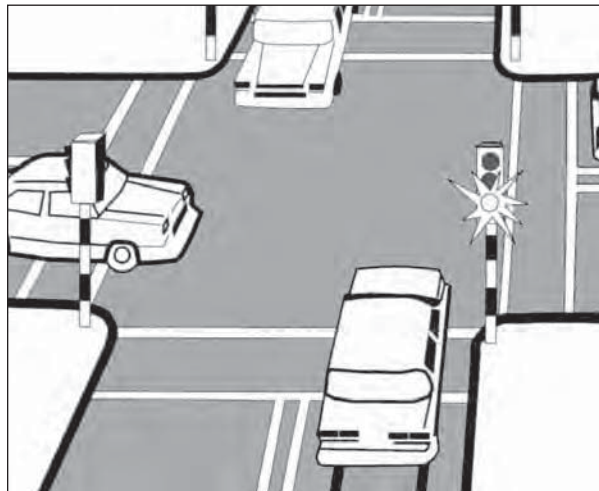


Turning With a Wide Radius

SPEED AND BRAKING PROBLEMS

The research showed that braking properly can be a difficult task for an impaired driver. For example, there is a good chance the driver is DWI if you observe any type of **stopping problem**. Stopping problems include:

- **Stopping too far from a curb or at an inappropriate angle**
- **Stopping too short or beyond a limit line**
- **Jerky or abrupt stops**



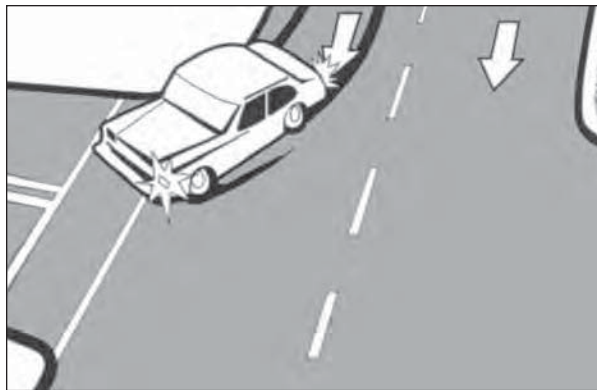
Stopping Beyond a Limit Line

Impaired drivers also can experience difficulty maintaining an appropriate speed. There is a good chance the driver is DWI if you observe a vehicle to:

- **Accelerate or decelerate rapidly for no apparent reason**
- **Vary its speed, alternating between speeding up and slowing down**
- **Be driven at a speed that is 10 miles per hour (mph) or more under the limit**

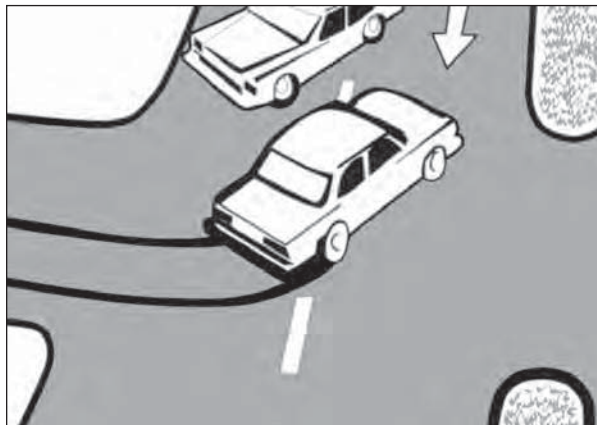
VIGILANCE PROBLEMS

Vigilance concerns a person's ability to pay attention to a task or notice changes in surroundings. A driver whose vigilance has been impaired by alcohol might forget to turn on his or her headlights when required. Similarly, impaired drivers often forget to signal a turn or lane change, or their signal is inconsistent with their maneuver, for example, signaling left but turning right.



Signaling Inconsistent With Driving Actions

Alcohol-impaired vigilance also results in motorists driving into opposing or crossing traffic and turning in front of oncoming vehicles with insufficient headway.



Driving Into Opposing or Crossing Traffic

Driving is a complex task that requires accurate information about surrounding traffic conditions. Failing to yield the right of way and driving the wrong way on a one way street are dangerous examples of vigilance problems.

A driver whose vigilance has been impaired by alcohol also might respond more slowly than normal to a change in a traffic signal. For example, the vehicle might remain stopped for an unusually long period of time after the signal has turned green. Similarly, an impaired driver might be unusually slow to respond to an officer's lights, siren, or hand signals.

The most extreme DWI cue in the category of vigilance problems is to find a vehicle stopped in a lane for no apparent reason. Sometimes when you observe this behavior the driver will be just lost or confused, but more than half of the time the driver will be DWI—maybe even asleep at the wheel.

JUDGMENT PROBLEMS

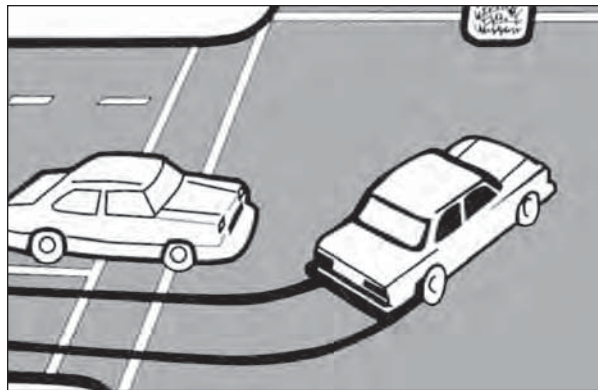
Operating a motor vehicle requires continuous decision making by the driver. Unfortunately, judgment abilities can be affected by even small amounts of alcohol. For example, alcohol-impaired judgment can cause a driver to follow another vehicle too closely, providing an unsafe stopping distance.

Alcohol-impaired judgment also can result in a driver taking risks or endangering others. If you observe a vehicle to make improper or unsafe lane changes, either frequently or abruptly or with apparent disregard for other vehicles, there is a good chance the driver's judgment has been impaired by alcohol.

Similarly, impaired judgment can cause a driver to turn improperly. For example, misjudgments about speed and the roadway can cause a driver

to take a turn too fast or to make sudden corrections during the maneuver. These corrections can appear to the observer as jerky or sharp vehicle movements during the turn.

Alcohol-impaired judgment can affect the full range of driver behaviors. For example, the research found that impaired drivers are less inhibited about making illegal turns than unimpaired drivers.

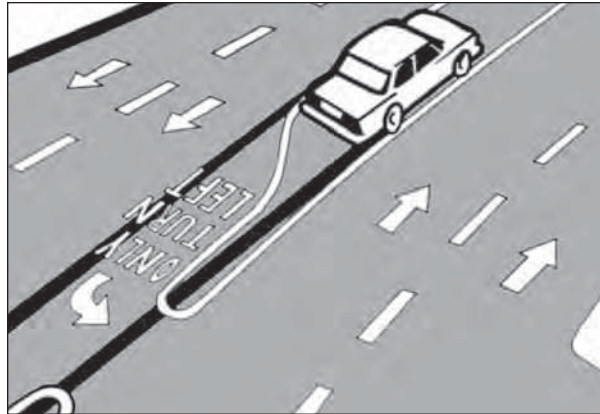


Turning Illegally

Driving on other than the designated roadway is another cue exhibited by alcohol-impaired drivers. Examples include driving at the edge of the roadway, on the shoulder, off the roadway entirely, and straight through turn-only lanes.

In some cases, impaired drivers stop inappropriately in response to an officer, either abruptly as if they had been startled or in an illegal or dangerous manner.

In fact, the research has shown that there is a good chance a driver is DWI if you observe the person exhibit *any inappropriate or unusual behavior*. Unusual behavior includes throwing something from the vehicle, drinking in the vehicle, urinating at the roadside, arguing with another motorist, or otherwise being disorderly. If you observe inappropriate or unusual behavior, there is a good probability that the driver is DWI.



Driving on Other Than the Designated Roadway

The final cue is actually one or more of a set of indicators related to the personal behavior or appearance of a driver. These indicators include, gripping the steering wheel tightly, driving with one's face close to the windshield, slouching in the seat, and staring straight ahead with eyes fixed. Some officers routinely scrutinize the faces of drivers in oncoming traffic, looking for the indicators of impairment. If you observe a driver who **appears to be impaired**, the research showed that there is an excellent probability that you are correct in your judgment.



Appearing To Be Impaired

SUMMARY

To summarize, the DWI cues related to **problems in maintaining proper lane position** include:

- **Weaving**
- **Weaving across lane lines**
- **Straddling a lane line**
- **Drifting**
- **Swerving**
- **Almost striking a vehicle or other object**
- **Turning with a wide radius or drifting during a curve**

The DWI cues related to **speed and braking problems** include:

- **Stopping problems (too far, too short, too jerky)**
- **Accelerating for no reason**
- **Varying speed**
- **Slow speed**

The DWI cues related to **vigilance problems** include:

- **Driving without headlights at night**
- **Failure to signal a turn or lane change or signaling inconsistently with actions**
- **Driving in opposing lanes or the wrong way on a one-way street**
- **Slow response to traffic signals**
- **Slow or failure to respond to officer's signals**
- **Stopping in the lane for no apparent reason**

The DWI cues related to **judgment problems** include:

- **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 an officer**
- **Inappropriate or unusual behavior**
- **Appearing to be impaired**

POST-STOP CUES

In addition to the driving cues, the following post-stop cues have been found to be excellent predictors of DWI.

- **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 or officer must repeat questions**
- **Providing incorrect information or changes answers**
- **Odor of alcoholic beverage from the driver**

DOT HS 808 677
March 2010

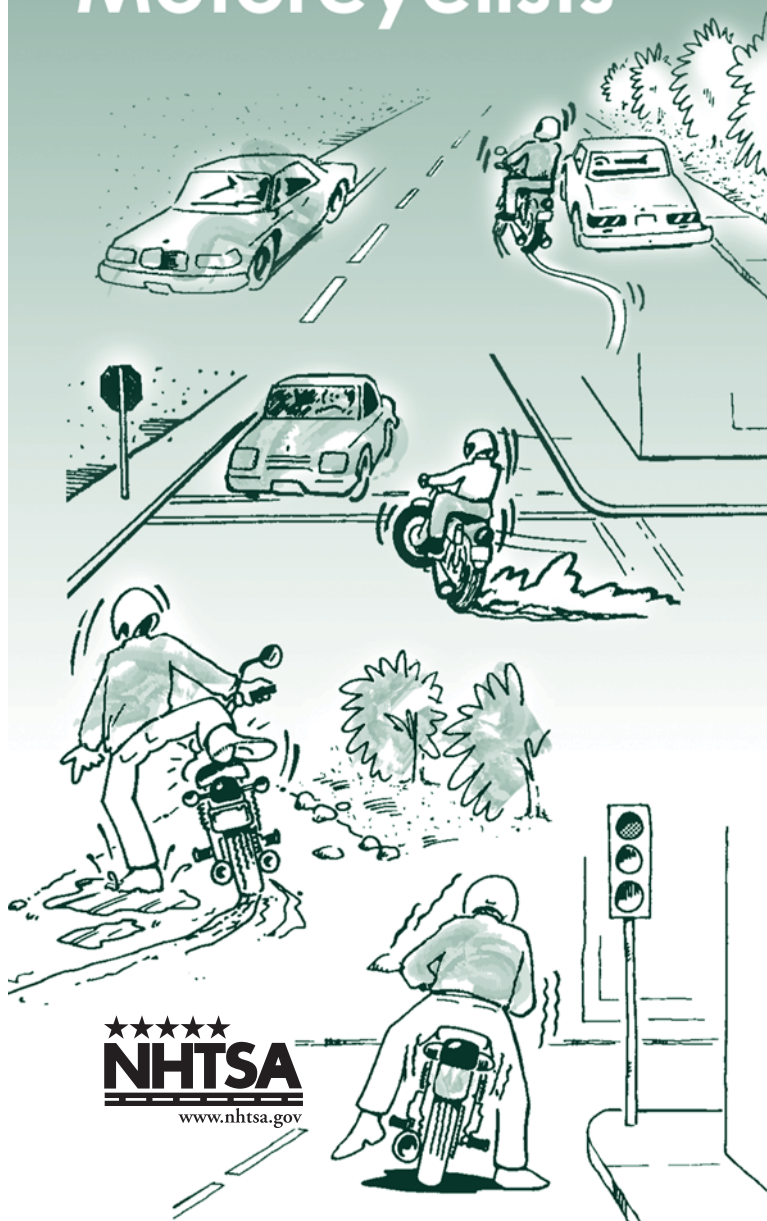


U.S. Department of Transportation
**National Highway Traffic Safety
Administration**



National Highway Traffic Safety Administration

The Detection of DWI Motorcyclists



★★★★★
NHTSA
www.nhtsa.gov

Motorcycle DWI Detection Guide

NHTSA has found that the following cues predicted impaired motorcycle operation.

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

The Detection of DWI Motorcyclists

Introduction

The National Highway Traffic Safety Administration (NHTSA) estimated that in 2011, about 29 percent of motorcycle operators involved in fatal crashes had a blood alcohol concentration (BAC) of .08 grams per deciliter (g/dL) or higher.

Clearly, enforcing impaired driving laws is a key to reducing the number of alcohol-related motorcyclist fatalities. *But which cues should be used to detect impaired motorcyclists?*

NHTSA sponsored research to develop a set of behavioral cues to be used by law enforcement personnel to detect motorcyclists who are operating their vehicles while intoxicated. The researchers began by interviewing experienced patrol officers from across the country to determine what behavioral cues have been used to detect impaired motorcyclists. A few, primarily motorcycle officers, suggested cues that reflected considerable understanding of the mental and physical requirements of riding a motorcycle. Others believed the cues to be identical to those used to detect impaired drivers. But some officers, even those with many years of experience, reported they believe there are no cues that can be used to distinguish DWI from unimpaired motorcycle operation.

In addition to interviewing law enforcement personnel, the research team developed a database of 1,000 motorcycle DWI arrest reports. The research team focused on officers' narratives and motorcyclists' behaviors that motivated the stops, and correlated those behaviors with BAC. Analysis of the interviews and arrest report data resulted in an inventory of about 100 cues that have been observed by officers in relation to impaired operation of motorcycles.

The researchers, working closely with law enforcement personnel, conducted two major field studies involving more than 50 sites throughout the United

States. Officers recorded information about every enforcement stop they made of a motorcyclist. Those field studies permitted the researchers to identify the most effective cues and to calculate the probabilities those cues were predictive of DWI. This brochure highlights the results of that research.

Fourteen cues were identified that best discriminate between DWI and unimpaired motorcycle operation. These cues have been labeled as “Excellent Cues” and “Good Cues,” based on the study’s results. The *excellent* cues predicted impaired motorcycle operation at least 50 percent of the time. The *good* cues predicted impaired motorcycle operation 30 to 49 percent of the time. The special coordination and balance requirements of riding a two-wheeled vehicle provided most of the behaviors in the “Excellent” category of cues.

Important Information

Law enforcement officers across the United States have used the cues described in this brochure to help detect impaired motorcycle operators. The cues can be used at any hour of the day and night, and they apply to all two-wheeled motor vehicles.

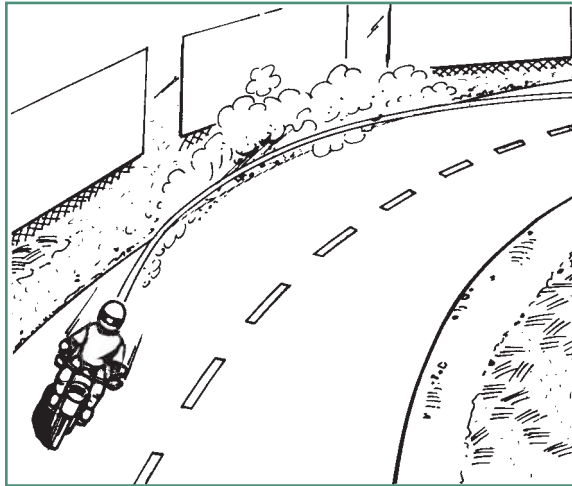
The cues described and illustrated in this brochure (and on a training video) are the behaviors that are most likely to discriminate between impaired and normal operation of a motorcycle. Cases that involve speeding, however, require additional clarification. Motorcyclists stopped for excessive speed are likely to be driving while intoxicated only about 10 percent of the time (i.e., 10 times out of 100 stops for speeding). But because motorcyclists tend to travel in excess of posted speed limits, speeding is associated with a large portion of all motorcycle DWI arrests. In other words, while only a small proportion of speeding motorcyclists are likely to be considered DWI, the large number of motorcyclists who are speeding results in a large number of DWIs, despite the relatively small probability.

This research will be helpful to officers in:

- Detecting impaired motorcyclists
- Articulating observed behaviors on arrest reports
- Supporting officer's expert testimony

Drifting During Turn or Curve

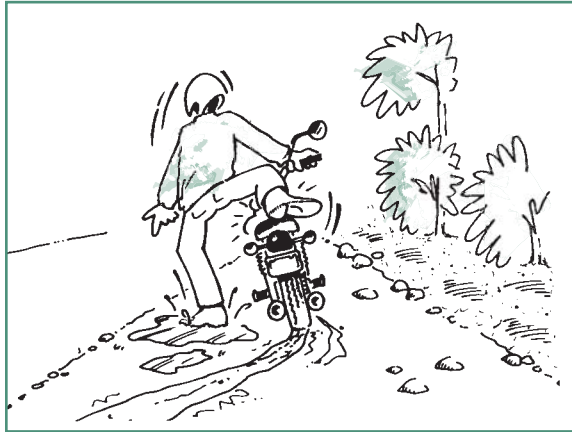
Earlier studies have shown that the most common cause of single-vehicle, fatal motorcycle crashes is the failure to negotiate curves, with the motorcycle continuing in a straight line until it strikes a stationary object. This type of crash is usually caused by alcohol-impaired balance and coordination. In less extreme cases, the motorcycle's turn radius expands during the maneuver. The motorcycle appears to drift outside of the lane or into another lane, through the curve, or while turning a corner. If you see a motorcycle drifting during a turn or curve, do the rider a favor and pull him or her over – our study showed there is a better than average possibility that the motorcyclist is a DWI offender.



Trouble With Dismount

Parking and dismounting a motorcycle can be a useful field sobriety test. The motorcyclist must turn off the engine and locate and deploy the kickstand. The operator must then balance his or her weight on one foot while swinging the other foot over the seat to dismount. But first, the

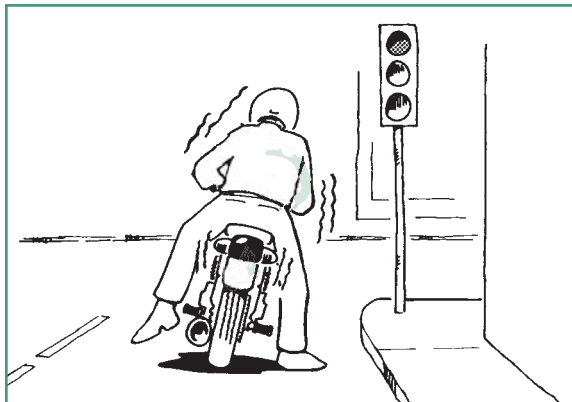
operator must decide upon a safe place to stop the bike. Problems with any step in this sequence can be evidence of alcohol impairment.



Not every motorcyclist you observe experiencing some difficulty with a dismount is riding under the influence, but study results indicated that more than 50 percent of them were DWI offenders. In other words, having a problem dismounting is a reliable cue to DWI.

Trouble With Balance at Stop

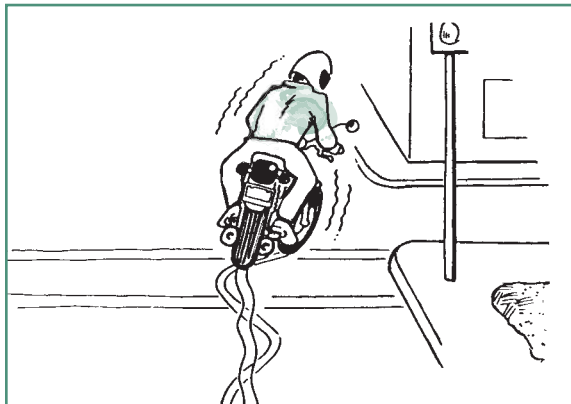
One typical practice for motorcycle riders at a stop is for the motorcyclist to place one foot on the ground to keep the bike upright, while leaving the other foot



covering the brake pedal. Some riders favor placing both feet on the ground for stability. Riders whose balance has been impaired by alcohol often have difficulty with these tasks. They might be observed as having shifted their weight from side-to-side, that is, from one foot to another, to maintain balance at a stop. From a block away, an officer might notice a single taillight moving from side to side in a gentle rocking motion. If you observe a motorcyclist having trouble with balance at a stop, there is a better than average chance that the operator is a DWI offender.

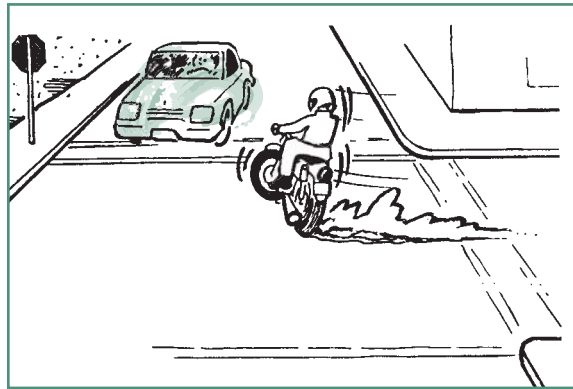
Turning Problems

The research also identified four turning problems that indicate rider impairment:

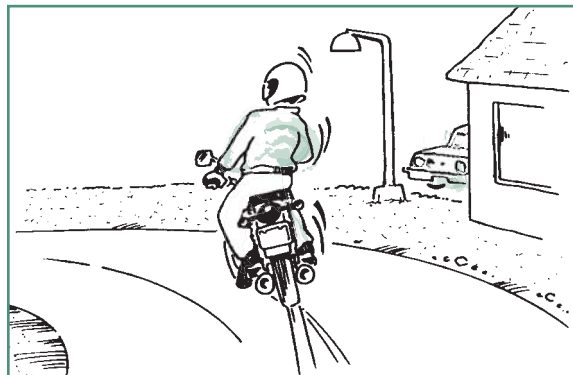


- **Unsteady During Turn or Curve.** The gyroscopic effects of a motorcycle's wheels tend to keep a motorcycle "on track" as long as speed is maintained. As a motorcycle's speed decreases, the demands placed on the operator's balancing capabilities increases. As a result, an officer might observe a motorcycle's front wheels or handlebars wobbling as an impaired rider attempts to maintain balance at slow speeds or during a turn.

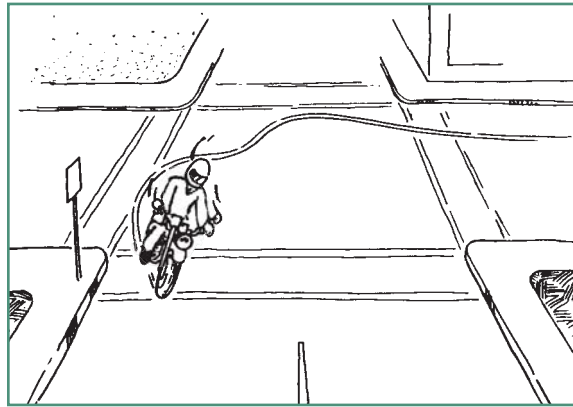
-
- **Late Braking During Turn.** The next turning problem is “late braking during a turn or on a curve.” A motorcyclist normally brakes prior to entering a turn or curve, so the motorcycle can accelerate through the maneuver for maximum control. An impaired motorcyclist might misjudge the speed or distance to the corner or curve, requiring an application of the brakes during the maneuver.



- **Improper Lean Angle During Turn.** A third turning problem occurs when a motorcyclist normally negotiates a turn or curve by leaning into the turn. When a rider's balance or speed decision-making is impaired, the rider frequently attempts to sit upright through the maneuver. As a result, a trained observer can detect an “improper lean angle.”

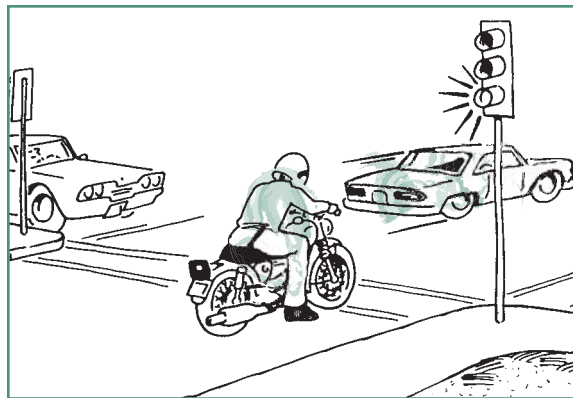


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- **Erratic Movements During Turn.** The fourth turning problem is “erratic movements.” These are defined as an inconsistent action or a sudden correction of a motorcycle maneuver during a turn or curve that can also indicate impaired driving. If you observe a motorcyclist who is unsteady during a turn or curve, brakes late, assumes an improper lean angle, or makes erratic movements during a turn or curve, there is a better-than-average chance that the motorcyclist is driving while impaired.



Inattentive to Surroundings

Vigilance concerns people’s ability to pay attention to a task or notice changes in their surroundings. A motorcyclist whose vigilance has been impaired by



alcohol consumption might fail to notice that the traffic light has changed from red to green.

A vigilance problem also is evident when motorcyclists are inattentive to their surroundings or are seemingly unconcerned with detection by law enforcement. For example, there is cause for suspicion of DWI when a motorcyclist fails to periodically scan the area around the bike when in traffic, a wise defensive riding measure to guard against potential encroachment by other vehicles. There is further evidence of impairment if a motorcyclist fails to respond to an officer's emergency lights or hand signals.

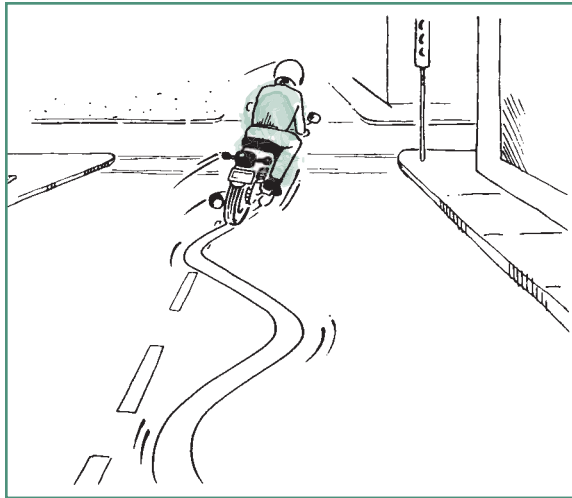
If you observe a motorcyclist to be inattentive to the surroundings, there is a better than average chance that the motorcyclist is a DWI violator.

Inappropriate or Unusual Behavior

There is a category of cues referred to as "inappropriate or unusual behavior." This category of cues includes behaviors such as operating a motorcycle while holding an object in one hand or under an arm, carrying an open container of alcohol, dropping something from a moving motorcycle, urinating at the roadside, arguing with another motorist, or otherwise being disorderly. If you observe inappropriate or unusual behavior by a motorcyclist, there is a better than average chance that the motorcyclist is a DWI offender.

Weaving

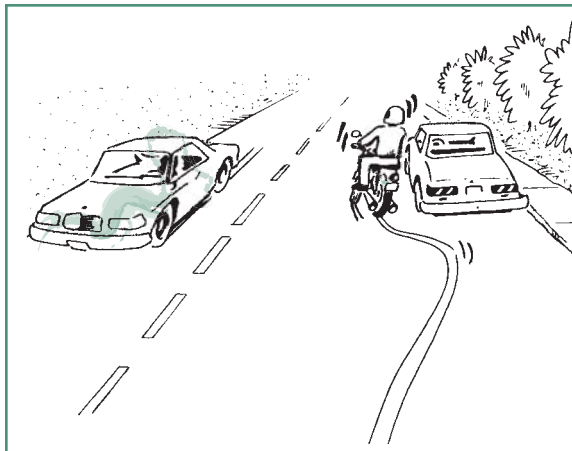
You are probably familiar with weaving as a predictor of DWI. If you see an automobile weaving there is a better than average chance the driver has exceeded the legal alcohol limits, but if you observe a motorcycle to be weaving, the probability of DWI is



even greater – weaving is an excellent cue. Weaving involves excessive movement within a lane or across lane lines, but does not include movements necessary to avoid road hazards.

Erratic Movements While Going Straight

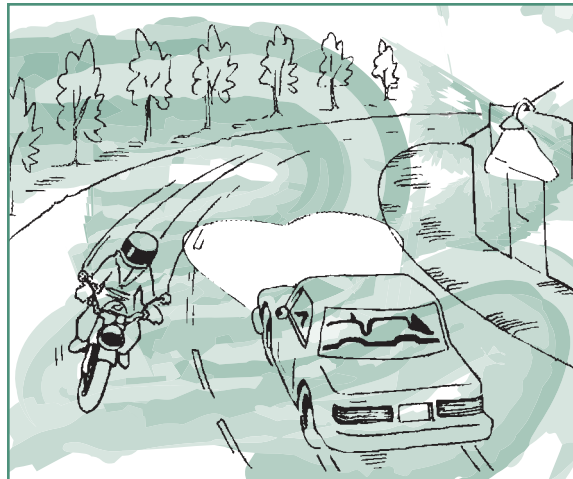
If you observe a motorcyclist making erratic movements or sudden corrections while attempting to ride in a straight line, study results indicated there is



a good probability that the rider is a DWI violator. In fact, during the study erratic movements while going straight were observed 30 to 49 percent of the time in relation to impaired driving.

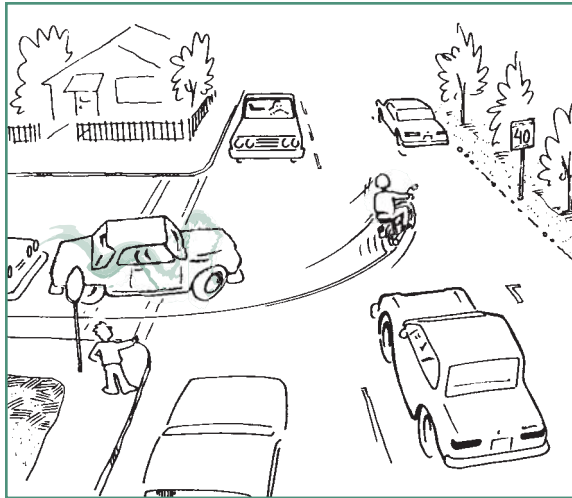
Operating without Lights at Night

Operating a motorcycle without lights at night is dangerous and can be another indicator of operator impairment. Study results showed that if you detect a motorcyclist riding at night without lights, there is a good chance that the operator is a DWI offender.



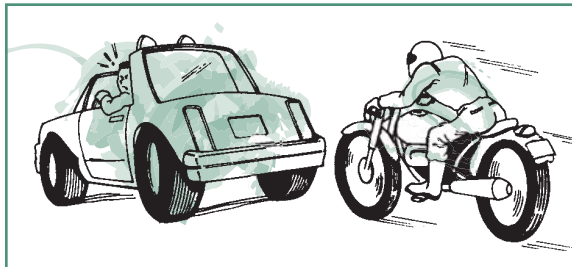
Recklessness

Motorcyclists tend to ride faster than automobiles so speeding is not necessarily a good predictor of DWI for motorcyclists. On the other hand, recklessness or riding too fast for the conditions was found to be a good indicator of operator impairment.



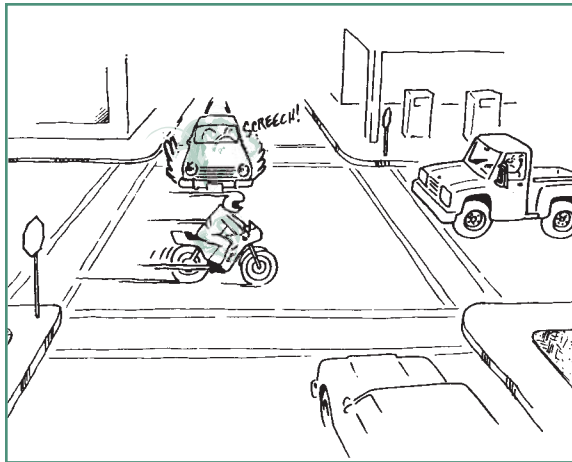
Following Too Closely

Following too closely, which is an unsafe following distance, is another indication of impaired operator judgment. During the study, this cue was found to be a good predictor of DWI by motorcycle riders.



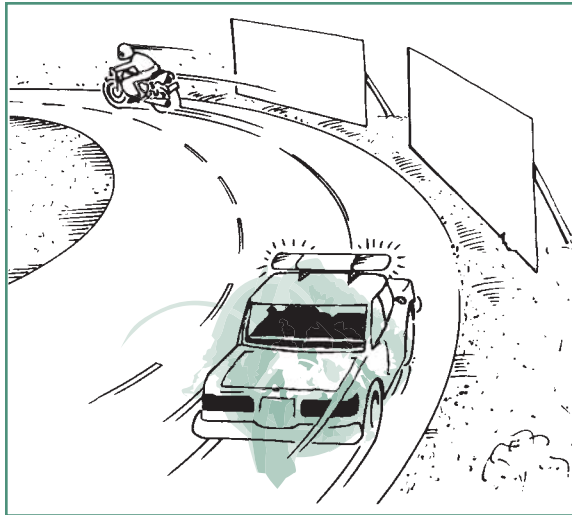
Running Stop Light or Sign

Failure to stop at a red light or stop sign can indicate either impaired vigilance capabilities (i.e., did not see the stop light or sign), or impaired judgment (i.e., decided not to stop). Whatever the form of impairment, if you observe a motorcyclist running a stop light or sign, there is a good chance that he or she is a DWI offender.



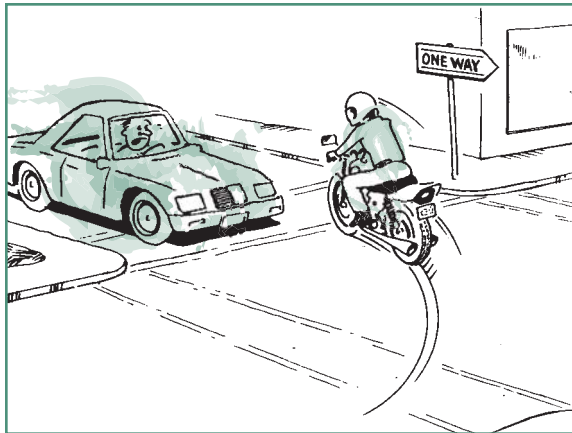
Evasion

Evasion, or fleeing an officer, is a recurring problem. If a motorcyclist attempts to evade an officer's enforcement stop, study results indicate there is a good chance he is a DWI violator as well.



Wrong Way

Obviously, riding into opposing traffic is dangerous. Study results showed that when you find a motorcycle going the wrong way in traffic, there is a good chance that the operator is under the influence. This includes going the wrong way on a one-way street, and crossing a center divider line to ride into opposing traffic.



Motorcycle DWI Detection Guide

NHTSA has found that the following cues predicted impaired motorcycle operation.

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

This brochure and related training materials are based on NHTSA Technical Report DOT HS 807 839, The Detection of DWI Motorcyclists, which is available upon request from NHTSA's Safety Countermeasures Division (NTI-121), 1200 New Jersey Avenue SE., Washington, DC 20590.

DOT HS 807 856
revised March 2013



U.S. Department
of Transportation
**National Highway
Traffic Safety
Administration**



9396a-102914-v3

6 SFST

Phase Two: Personal Contact

LEARNING OBJECTIVES

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

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D. Interview/Questioning Techniques.....	10
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LEARNING ACTIVITIES

- Instructor-Led Presentations
- Video Presentation
- Instructor-Led Demonstrations
- Participant Presentations



Learning Objectives

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

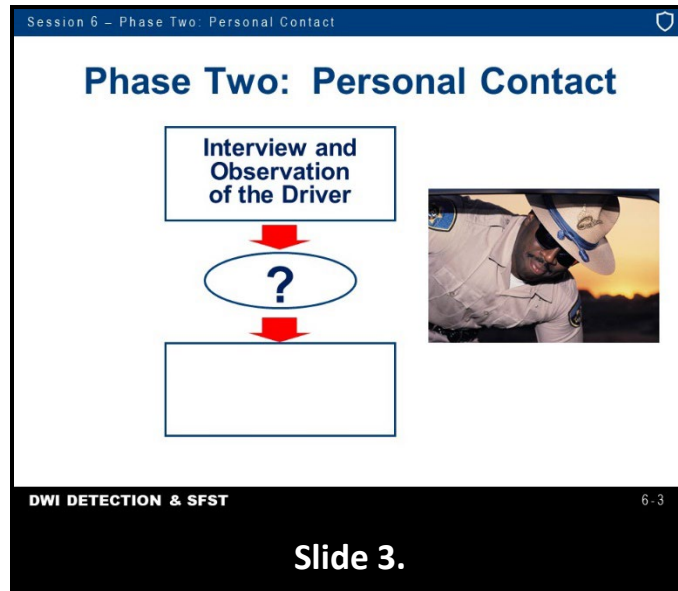


DWI DETECTION & SFST

6-2

Slide 2.

A. Overview: Tasks and Decision



DWI Detection Phase Two: Personal Contact, like Phases One and Three, comprise 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 all drivers stopped on suspicions of DWI be instructed to exit. It is important to note by instructing the driver to exit the vehicle, you 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 and to note any additional evidence of impairment.

You may initiate Phase Two without Phase One. This may occur, for example, at a checkpoint or when you have responded to the scene of a crash.

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

Session 6 – Phase Two: Personal Contact

Phase Two: Personal Contact

```
graph TD; A[Interview and Observation of the Driver] --> B((?)); B --> C[Observation of the Exit];
```

Should Driver Exit?

Observation of the Exit

DWI DETECTION & SFST 6-4

Slide 4.

You may have developed a strong suspicion 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. 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 an 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 definite indicators the driver may be 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's policy dictates 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, closely observe the driver's actions during the exit from the vehicle and note any evidence of impairment.

B. Typical Investigation Clues of the Driver Interview

Session 6 – Phase Two: Personal Contact

Personal Contact

What do you see?



DWI DETECTION & SFST 6-5

Slide 5.

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.

- The sense of sight
- The sense of hearing
- The sense of smell

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:

Session 6 – Phase Two: Personal Contact

What Do You See?

- Bloodshot eyes
- Soiled clothing
- Fumbling fingers
- Alcohol containers
- Drug and drug paraphernalia
- Bruises, bumps, scratches
- Unusual actions

DWI DETECTION & SFST 6-6

Slide 6.

- Bloodshot eyes
- Soiled clothing

- Fumbling fingers
 - Alcohol containers
 - Drugs or drug paraphernalia
 - Bruises, bumps or scratches
 - Unusual actions
-

Session 6 – Phase Two: Personal Contact

Personal Contact

What do you hear?



DWI DETECTION & SFST 6-7

Slide 7.

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

Session 6 – Phase Two: Personal Contact

What Do You Hear?

- Slurred speech
- Admission of drinking
- Inconsistent responses
- Unusual statements
- Abusive language
- Anything else

DWI DETECTION & SFST 6-8

Slide 8.

- Slurred speech
- Admission of drinking
- Inconsistent responses
- Unusual statements
- Abusive language

- Anything else

Session 6 – Phase Two: Personal Contact

Personal Contact

What do you smell?



DWI DETECTION & SFST 6-9

Slide 9.

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

Session 6 – Phase Two: Personal Contact

What Do You Smell?

- Alcoholic beverage
- Marijuana
- “Cover-up” odors
- Other unusual odors

DWI DETECTION & SFST 6-10

Slide 10.

- Alcoholic beverages
- Marijuana
- Cover up odors
- Other unusual odors

Session 6 – Phase Two: Personal Contact

Phase Two: Task One Face to Face Observation and Interview of Suspect

Requires the ability to:

- Recognize the sensory evidence of alcohol and/or other drug influence
- Describe that evidence clearly and convincingly

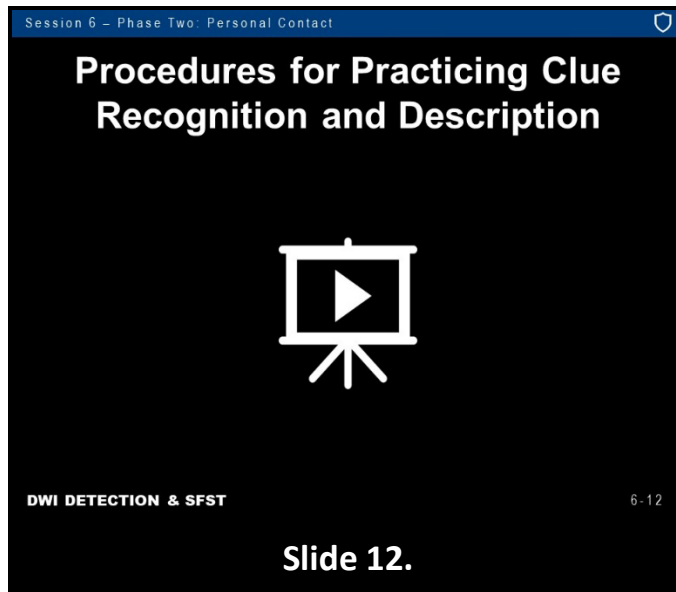
DWI DETECTION & SFST 6-11

Slide 11.

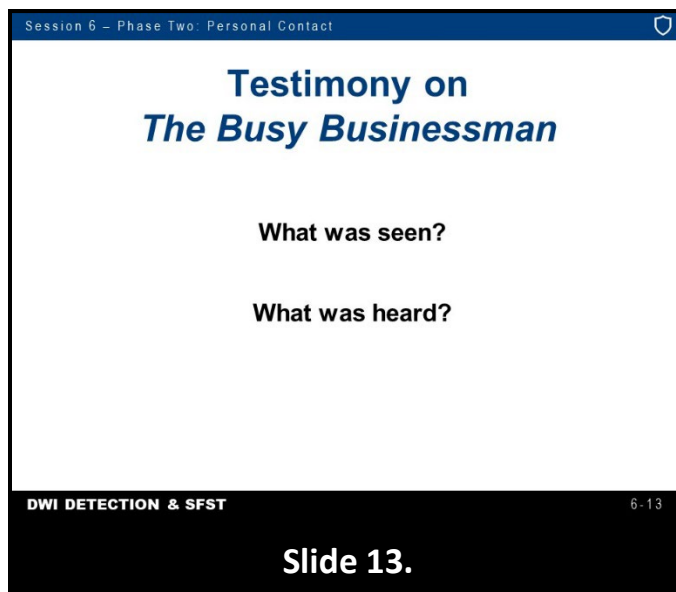
Proper face-to-face observation and interview of the driver demands two distinct but related abilities; The ability to recognize the sensory evidence of alcohol and/or other drug influence; and the ability to describe that evidence clearly and convincingly. Developing these abilities requires practice.

C. Recognition and Description of Investigation Clues

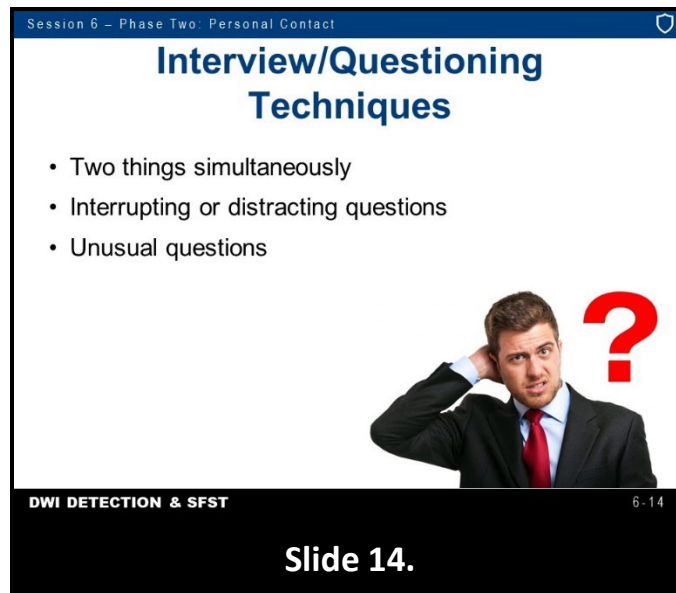
A basic purpose of the face-to-face observation and interview of the driver is to identify and gather evidence of alcohol and/or other drug influence. This is the purpose of each task in each phase of DWI detection. During the face-to-face observation and interview stage, it is not necessary to gather sufficient evidence to arrest the driver immediately for DWI.



You will have to base your description of the driver's possible impairment strictly on what you see and hear during the face-to-face contact. Both senses provide some critically important evidence, not only in this video segment but in all face-to-face contacts.



D. Interview/Questioning Techniques



There are a number of techniques you can use to assess impairment 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 SFSTs.**

The questions you ask and the way in which you ask them can constitute simple divided attention tasks. Three techniques are particularly pertinent: Asking for two things simultaneously; Asking interrupting or distracting questions; and, Asking unusual questions.

An example of the first technique, asking for two things simultaneously, is requesting the driver to produce both the driver's license and the vehicle registration. Possible evidence of impairment may be observed as the driver responds to this dual request.

Session 6 – Phase Two: Personal Contact

License and Registration

- Forgets to produce both documents
- Produces wrong documents
- Fails to see license, registration
- Fumbles/drops item
- Unable to retrieve documents using fingertips

DWI DETECTION & SFST 6-15

Slide 15.

Possible evidence of impairment that might be observed during the production of the license and registration. Be alert for a driver who:

- Forgets to produce both documents
- Produces documents other than the ones requested
- Fails to see the license, registration, or both while searching for them
- Fumbles or drops wallet, purse, license, or registration
- Is unable to retrieve documents using fingertips

Session 6 – Phase Two: Personal Contact

Questions that Divide Attention

- What day is it?
- Where are you coming from?
- Be alert for the driver who:
 - Ignores question
 - Forgets to resume search
 - Supplies grossly incorrect answer

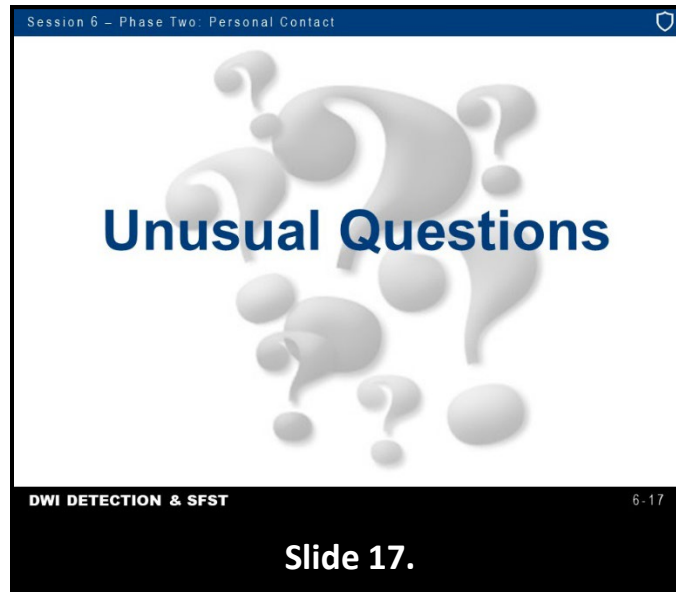
DWI DETECTION & SFST 6-16

Slide 16.

The second technique would be to ask questions that require 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 the license, registration, or both, you ask unrelated questions; “What day is it?” or “Where are you coming from?”

Possible evidence of impairment may be disclosed by the actions of the driver after this question has been posed. 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?" "What is your zip code?" "What is the month and day of your birth?" etc.

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 misunderstood the unusual question and responded instead to a usual – but unasked – question.

Session 6 – Phase Two: Personal Contact

Medical Questions

- Physical conditions
- Physician's care
- Medical issues
- Medications



DWI DETECTION & SFST 6-18

Slide 18.

Officers should be alert for potential medical conditions that may mimic drug or alcohol impairment. Some questions may include:

- Do you have any physical disabilities?
- Are you sick or injured?
- Are you under the care of a doctor or dentist?
- Are you diabetic or epileptic?
 - If diabetic, ask if they take insulin.
- Are you on any medications?

Session 6 – Phase Two: Personal Contact

Additional Techniques Alphabet

A B C D E F G
H I J K L M N
O P Q R S T
U V W X Y Z

DWI DETECTION & SFST 6-19

Slide 19.

These techniques are optional and may help the officer with their decision to have the driver exit the vehicle. These techniques have not been scientifically validated by NHTSA but still can be useful for obtaining evidence of impairment.

The Alphabet technique requires the driver to recite a part of the alphabet. You instruct the driver 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.

Session 6 - Phase Two: Personal Contact

Additional Techniques Count Down

68 67 66 65 64 63
62 61 60 59 58 57
56 55 54 53...

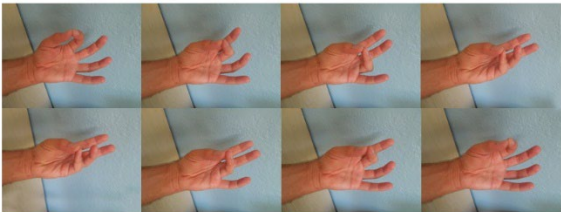
DWI DETECTION & SFST 6-20

Slide 20.

The Count Down technique requires the driver 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. **This technique should never be given using starting and stopping points ending in 0 or 5 because these numbers are too easy to recall. For example, do not request the driver count backwards from 65 to 50. Instead, ask the driver to count backwards from 68 to 53.**

Session 6 – Phase Two: Personal Contact

Additional Techniques Finger Count



DWI DETECTION & SFST 6-21

Slide 21.

In the Finger Count technique, the driver is asked to touch the tip of the thumb 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 driver is able to perform the divided attention task.

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

Session 6 – Phase Two: Personal Contact

The Exit

What do you see?

- Angry, unusual reaction
- Can't follow instructions
- Can't open door
- Leaves car in gear
- "Climbs" out of car
- Leans against car
- Keeps hand on car



DWI DETECTION & SFST6-22

Slide 22.

Your decision to instruct the driver to step from the vehicle usually is made after you have developed a suspicion the driver is impaired. Even if that suspicion may be very strong, the driver is usually not under arrest when you give the instruction. How the driver steps and walks from the vehicle and actions or behavior during the exit sequence may provide important evidence of impairment. Be alert to the driver who:

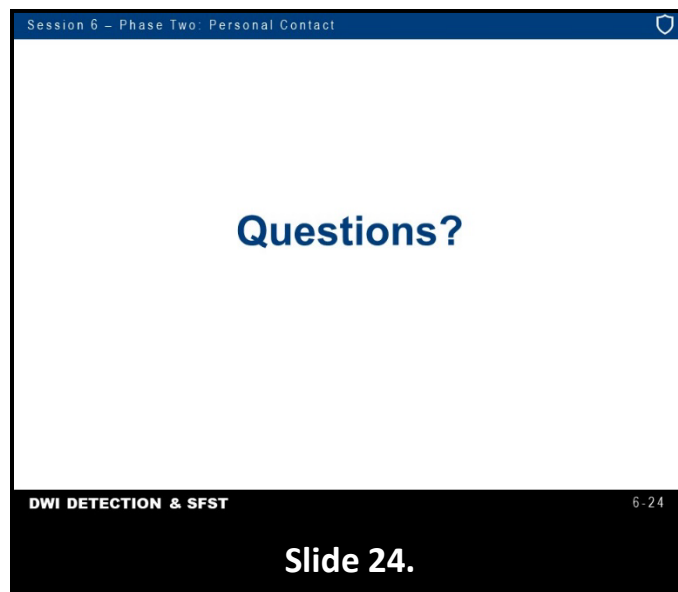
- Shows angry or unusual reactions
- Cannot follow instructions
- Cannot open the door
- Leaves the vehicle in gear
- Climbs out of vehicle
- Leans against vehicle
- Keeps hands on vehicle for balance

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.

The signal to stop creates a new situation to which the driver must devote some attention, i.e., emergency flashing lights, siren, etc., that demand and divert the subject's attention.



Remember, you may instruct a driver to exit the vehicle as a means of ensuring your own safety. Safety considerations take precedence over all other considerations.



Session 6 – Phase Two: Personal Contact

Test Your Knowledge

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 see during the Phase Two interview are:
 - A. _____
 - B. _____
 - C. _____

DWI DETECTION & SFST 6-25

Slide 25.

Test Your Knowledge

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 see during the Phase Two interview are:
 - A. _____
 - B. _____
 - C. _____
-

Session 6 – Phase Two: Personal Contact

Test Your Knowledge

4. Among the describable clues an officer might hear during the Phase Two interview are:

- A.
- B.
- C.

5. Among the describable clues an officer might smell during the Phase Two interview are:

- A.
- B.

DWI DETECTION & SFST 6-26

Slide 26.

4. Among the describable clues an officer might hear during the Phase Two interview are:

- A. _____
- B. _____
- C. _____

5. Among the describable clues an officer might smell during the Phase Two interview are:

- A. _____
 - B. _____
-

Session 6 – Phase Two: Personal Contact

Test Your Knowledge

6. Three techniques an officer might use in asking questions that constitute simple divided attention tasks.
7. The Countdown Technique requires the subject to _____
8. Leaning against the vehicle is a clue to DWI which may be observed during _____

DWI DETECTION & SFST 6-27

Slide 27.

6. There are three techniques an officer might use in asking questions that constitute simple divided attention tasks. These techniques are: _____
 7. The Count Down Technique requires the driver to _____
 8. Leaning against the vehicle is a clue to DWI which may be observed during _____.
-

7

SFST

Phase Three: Pre-Arrest Screening

LEARNING OBJECTIVES

- Describe the tasks and decision for Phase Three
- Define and describe nystagmus and concept of divided attention
- Describe the role and limitations of preliminary breath tests
- Discuss the arrest decision process

CONTENTS

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B. Horizontal Gaze Nystagmus – Definition, Concepts, Demonstration.....	4
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F. The Arrest Decision.....	24

LEARNING ACTIVITIES

- Instructor-Led Presentation
- Instructor-Led Demonstrations
- Video Presentation



Learning Objectives

- Describe tasks and decision for Phase Three
- Define and describe nystagmus and concept of divided attention
- Describe role and limitations of preliminary breath tests
- Discuss arrest decision process

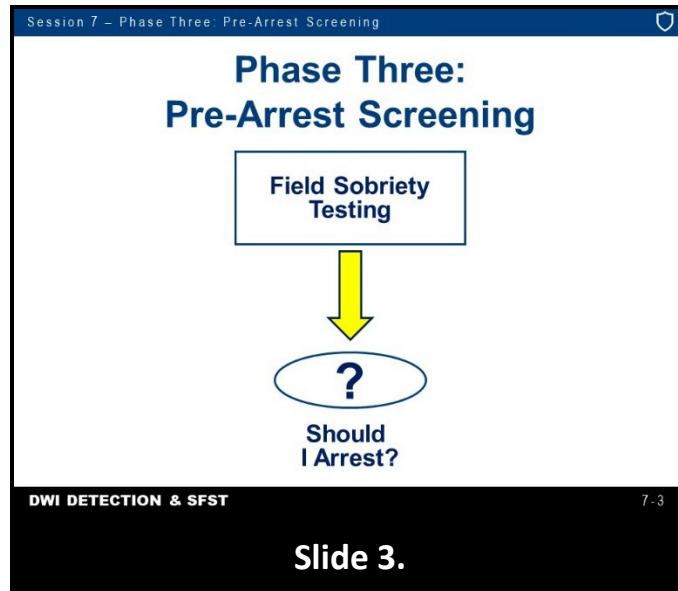


DWI DETECTION & SFST

7-2

Slide 2.

A. Overview: 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 Standardized Field Sobriety Tests (SFSTs). Based on these tests and on all other evidence from Phase One and Two, the officer should decide whether there is sufficient probable cause to arrest the subject for DWI. The entire detection process culminates in the arrest/no arrest decision. Depending on State laws and/or agency policies, the next task would be to administer (or arrange for) a Preliminary Breath Test (PBT) to confirm the chemical basis of the subject's impairment.

Session 7 – Phase Three: Pre-Arrest Screening

The Arrest Decision

- DWI detection process concludes with arrest decision
- Based on all evidence obtained during all three detection phases



DWI DETECTION & SFST 7-4

Slide 4.

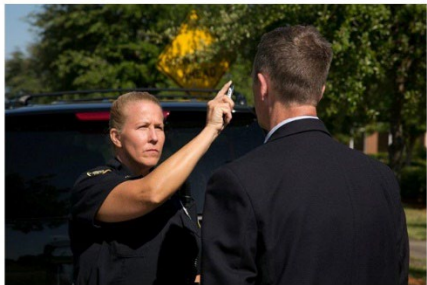
The DWI detection process concludes with the arrest decision. This decision is based on all of the evidence you have obtained during all three detection phases: on observation of the vehicle in motion and during the stopping sequence; on face-to-face observation of the subject and the subject's exit from the vehicle; and, pre-arrest screening.

B. Horizontal Gaze Nystagmus – Definition, Concepts, Demonstration

Session 7 – Phase Three: Pre-Arrest Screening

Nystagmus

Involuntary Jerking of the Eyes



DWI DETECTION & SFST 7-5

Slide 5.

"Nystagmus" means an involuntary jerking of the eyes. Alcohol and certain other drugs cause Horizontal Gaze Nystagmus (HGN).

Session 7 – Phase Three: Pre-Arrest Screening

Horizontal Gaze Nystagmus

- Reliable
- Involuntary
- Noticeable
- CNS Depressants, Inhalants, and Dissociative Anesthetics cause HGN

DWI DETECTION & SFST 7-6

Slide 6.

HGN is the most reliable field sobriety test. Especially when used in combination with the divided attention tests, it will help law enforcement officers correctly identify subjects who are impaired.

Involuntary jerking of the eyes becomes readily noticeable when a person is impaired by alcohol and certain drug categories. As a person's blood alcohol concentration (BAC) increases, the eyes will begin to jerk sooner as they gaze to the side. 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 usually unaware the jerking is happening.

In administering the HGN test, the officer has the subject follow the motion of a small stimulus with the eyes only. The stimulus may be the tip of a pen or penlight, or an eraser on a pencil, whichever contrasts with the background. In addition to alcohol, drugs such as Central Nervous System (CNS) Depressants, Inhalants, and Dissociative Anesthetics cause HGN.

Session 7 – Phase Three: Pre-Arrest Screening

Horizontal Gaze Nystagmus Indications

- Lack of Smooth Pursuit
- Distinct and Sustained Nystagmus at Maximum Deviation
- Onset of Nystagmus Prior to 45 Degrees
- 88% accurate detecting subjects ≥ 0.08 BAC

DWI DETECTION & SFST 7-7

Slide 7.

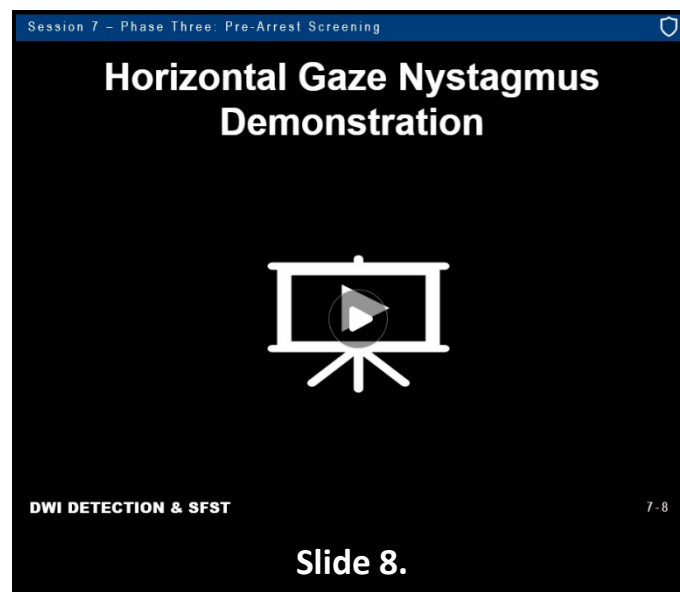
When the HGN test is administered, always begin with subject's left eye. Each eye is examined for three specific clues. As the eye moves from side to side, does it move smoothly, or does it jerk noticeably? As people become impaired by alcohol, their eyes exhibit a Lack of Smooth Pursuit as they move from side to side. When the eye moves as far to the side as possible and is kept at that position for four 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 BAC increases, it is more likely these clues will appear. The maximum total number of clues is six. The maximum number of clues that may appear in one eye is three. Based upon research using SFST-experienced personnel, HGN is 88% accurate at detecting subjects at or above 0.08 BAC.

To test for HGN, the subject is instructed to stand with feet together, hands at sides, hold the head still, and follow the motion of a stimulus with the eyes only.

The stimulus may be the tip of a pen or penlight or the eraser on a pencil, which contrasts with the background.

Each eye is checked, beginning with the subject's left. A subject's height might restrict ability to clearly see nystagmus. Subject may be placed in sitting position to accommodate a better view.

Two or more "passes" are made before each eye to look for each of the clues of nystagmus.



C. Vertical Gaze Nystagmus – Definition, Concepts, Demonstration

Session 7 – Phase Three: Pre-Arrest Screening

Vertical Gaze Nystagmus



DWI DETECTION & SFST 7-9

Slide 9.

Vertical Gaze Nystagmus (VGN) is an involuntary jerking of the eyes occurring as the eyes are held at maximum elevation. For VGN to be recorded, it must be distinct and sustained for a minimum of four seconds at maximum elevation.

D. Divided Attention Tests: Concepts, Examples, Demonstration

Session 7 – Phase Three: Pre-Arrest Screening

Divided Attention

Concentrating on more than one thing at a time
(mental tasks and physical tasks)



DWI DETECTION & SFST 7-10

Slide 10.

The most reliable and useful psychophysical tests employ the concept of divided attention: they require the subject to concentrate on more than one thing at a time (mental tasks and physical tasks). Driving is a complex divided attention task. In order to operate a vehicle safely, subjects 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 subjects often ignore the less critical tasks of driving in order to focus their impaired attention on the more critical tasks. For example, a subject may ignore a traffic signal and focus instead on speed control. Even when impaired, many people can handle a single, focused attention task fairly well. For example, a subject 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 the same time.

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 law enforcement agencies nationwide. The best of these tests exercises the same mental and physical capabilities a person needs to drive safely. A good, structured field sobriety test is simple and divides the subject's attention. Examples of divided attention tests include Walk and Turn (WAT) and One Leg Stand (OLS).

Session 7 – Phase Three: Pre-Arrest Screening

Typical Simultaneous Capabilities Required for Driving

- Information processing
- Short-term memory
- Judgment/decision making
- Balance
- Steady, sure reactions
- Clear vision
- Small muscle control
- Coordination of limbs

DWI DETECTION & SFST 7-11

Slide 11.

Typical simultaneous capabilities required for driving:

- 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.

Session 7 – Phase Three: Pre-Arrest Screening

Psychophysical Tests

- Focus on balance, coordination, information processing, etc.
- Observed as soon as face-to-face contact and interview
- Additional indicators observed as subject exits
- SFSTs are most scientifically reliable

DWI DETECTION & SFST 7-12

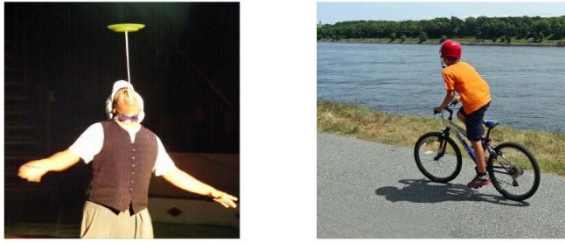
Slide 12.

Psychophysical tests are methods of assessing a subject's mental and physical impairment. These tests focus on the abilities needed for safe driving: balance, coordination, information processing, and so on. Indicators of psychophysical impairment may be observed as soon as you come into face-to-face contact with the subject and begin the interview. Additional indicators of impairment can be observed as the subject exits the vehicle to begin the field sobriety tests. The SFSTs are the most scientifically reliable indicators of psychophysical impairment.

Session 7 – Phase Three: Pre-Arrest Screening

Simplicity

Field sobriety tests should be reasonably simple for the average person to complete as instructed when sober.



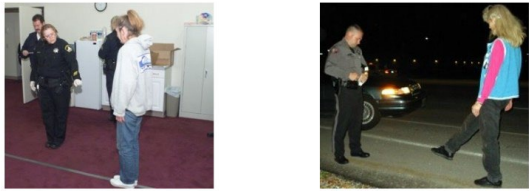
DWI DETECTION & SFST 7-13

Slide 13.

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 complete as instructed when sober. Tests that are difficult for a sober subject to perform have little or no evidentiary value.

Session 7 – Phase Three: Pre-Arrest Screening

Two Divided Attention Field Sobriety Tests



Walk and Turn

One Leg Stand

DWI DETECTION & SFST 7-14

Slide 14.

Two divided attention field sobriety tests that have proven accurate and effective in DWI detection are the Walk and Turn (WAT) and the One Leg Stand (OLS).

Session 7 – Phase Three: Pre-Arrest Screening

Walk and Turn Overview

- Validated by NHTSA
- 79% accurate detecting 0.08 BAC
- Administer as instructed
- Two stages:
 - Instruction Stage
 - Walking Stage

DWI DETECTION & SFST 7-15

Slide 15.

WAT is a test that has been validated through extensive research sponsored by the National Highway Traffic Safety Administration (NHTSA). Based upon research using SFST-experienced personnel, WAT is 79% accurate at detecting subjects at or above 0.08 BAC.

WAT is a divided attention test consisting of two stages: Instruction stage and Walking stage.

Session 7 – Phase Three: Pre-Arrest Screening

Walk and Turn Instruction Stage

- Divides subject's attention
 - Balancing
 - Information processing
- Subject stands with feet in heel-to-toe position
- Arms at side
- Listen to instructions

DWI DETECTION & SFST 7-16

Slide 16.

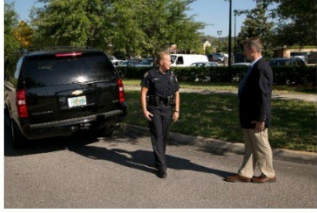
The Instruction Stage divides the subject's attention between a balancing task (standing while maintaining the heel-to-toe position) and an information processing task (listening to and remembering instructions). In the Instruction Stage, the subject must stand with their feet in a heel-to-toe position,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

Session 7 – Phase Three: Pre-Arrest Screening

Walk and Turn Walking Stage

Divides subject's attention

- Balancing
- Small muscle control
- Short term memory



DWI DETECTION & SFST 7-17

Slide 17.

In the Walking Stage, the subject takes nine heel-to-toe steps, turns in a prescribed manner, takes nine heel-to-toe steps back, counts the steps out loud, keeping arms at their side, and watches their feet. During the turn, the subject keeps their front foot on the line, turns in a prescribed manner, and uses 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 walking stage divides the subject's attention between a task of listening, comprehending, and carrying out the instruction.

Session 7 – Phase Three: Pre-Arrest Screening

Walk and Turn Demonstration



DWI DETECTION & SFST 7-18

Slide 18.

Session 7 – Phase Three: Pre-Arrest Screening

Walk and Turn Test Clues

1. Cannot keep balance while listening to the instructions
2. Starts too soon
3. Stops while walking
4. Does not touch heel-to-toe
5. Steps off the line
6. Uses arm(s) to balance
7. Improper turn
8. Incorrect number of steps

DWI DETECTION & SFST 7-19

Slide 19.

The WAT test is administered and interpreted in a standardized manner, i.e., the same way every time. Officers administering the WAT test observe the subject's performance for eight clues:

1. Cannot keep balance while listening to the instructions
2. Starts too soon
3. Stops while walking
4. Does not touch heel-to-toe
5. Steps off the line
6. Uses arm(s) to balance
7. Improper turn
8. Incorrect number of steps

Inability to complete the WAT test may occur when the subject is in danger of falling or otherwise cannot complete the test.

Session 7 – Phase Three: Pre-Arrest Screening

One Leg Stand Overview

- Validated by NHTSA
- 83% accurate detecting 0.08 BAC
- Two stages:
 - Instruction Stage
 - Balance and Counting Stage

DWI DETECTION & SFST 7-20

Slide 20.

The OLS has also been validated through NHTSA-sponsored research. Based upon research using SFST-experienced personnel, OLS is 83% accurate at detecting subjects at or above 0.08 BAC. It is a divided attention test consisting of two stages: Instruction stage and Balance and counting stage.

Session 7 – Phase Three: Pre-Arrest Screening

One Leg Stand Instruction Stage

Divides subject's attention

- Balancing
- Information processing



DWI DETECTION & SFST 7-21

Slide 21.

In the Instruction Stage, the subject must stand with their feet together, keep their arms at their sides, and listen to instructions.

Session 7 – Phase Three: Pre-Arrest Screening

Balance and Counting Stage

- Divides subject's attention
 - Balancing task
 - Information processing
- 30 second timing is important!

DWI DETECTION & SFST7-22

Slide 22.

In the Balance and Counting Stage, the subject must raise one foot, either foot, with the raised foot approximately six inches off the ground, keeping arms at their side, with both legs straight and the raised foot parallel to the ground. Have the subject, while looking at the elevated foot, count out loud in the following manner: "one thousand one", "one thousand two", "one thousand three" until told to stop. This divides the subject's attention between balancing (standing on one foot) and information processing (counting out loud).

The timing for a thirty-second period by the officer is an important part of the OLS test. The original research conducted by SCRI in 1977 showed many impaired subjects are able to stand on one leg for up to 25 seconds, but few can do so for 30 seconds.

Session 7 – Phase Three: Pre-Arrest Screening

One Leg Stand Demonstration



DWI DETECTION & SFST7-23

Slide 23.

Session 7 – Phase Three: Pre-Arrest Screening

One Leg Stand Test Clues

1. Sways while balancing
2. Uses arm(s) to balance
3. Hopping
4. Puts foot down

DWI DETECTION & SFST 7-24

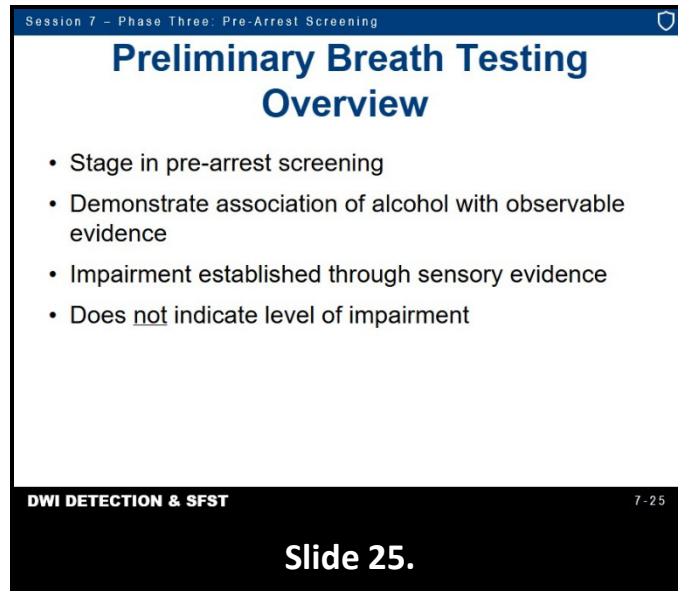
Slide 24.

OLS is also administered and interpreted in a standardized manner. Officers carefully observe the subject's performance and look for four specific clues:

1. Sways while balancing
2. Uses arm(s) to balance
3. Hopping
4. Puts foot down

Inability to complete the OLS test occurs when the subject is in danger of falling or otherwise cannot complete the test.

E. Advantages and Limitations of Preliminary Breath Testing

A presentation slide titled "Preliminary Breath Testing Overview". The slide is part of "Session 7 - Phase Three: Pre-Arrest Screening" and is labeled "DWI DETECTION & SFST" and "7-25". It lists four bullet points: "Stage in pre-arrest screening", "Demonstrate association of alcohol with observable evidence", "Impairment established through sensory evidence", and "Does not indicate level of impairment".

Session 7 - Phase Three: Pre-Arrest Screening

Preliminary Breath Testing Overview

- Stage in pre-arrest screening
- Demonstrate association of alcohol with observable evidence
- Impairment established through sensory evidence
- Does not indicate level of impairment

DWI DETECTION & SFST 7-25

Slide 25.

Preliminary breath testing (PBT), like psychophysical testing, is a stage in the pre-arrest screening of a DWI subject. Usually the subject is not yet under arrest when requested to submit to the PBT.

The basic purpose of PBT is to demonstrate the association of alcohol with the observable evidence of the subject's impairment. The subject'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 impairment by yielding an on-the-spot indication of the subject's BAC. The PBT provides direct indication of the BAC level. **It does not indicate the level of the subject's impairment.** Impairment varies widely among individuals with the same BAC level. If the PBT results are not consistent with the level of impairment, other drugs or a medical condition could be contributing to the observed impairment.

Session 7 – Phase Three: Pre-Arrest Screening

Preliminary Breath Testing Investigative Process

- Not sole basis for a DWI arrest
- Provides direct indication of alcohol impairment
- Administer after SFSTs

DWI DETECTION & SFST 7-26

Slide 26.

The DWI incident remains in the investigative process. Whenever possible, the PBT result should not be the sole basis for a DWI arrest. It is an important factor because it provides direct indication of alcohol impairment. All other evidence, from initial observation of the vehicle in operation through psychophysical testing, indicates alcohol influence indirectly, based on impairment of the subject's mental and physical faculties.

Session 7 – Phase Three: Pre-Arrest Screening

Preliminary Breath Testing Advantages

- Corroborate other evidence
- Confirm officer's observations
- Confirm alcohol as cause of impairment
- Help establish probable cause for DWI arrest

DWI DETECTION & SFST 7-27

Slide 27.

A PBT offers several important advantages for DWI detection. First, it may corroborate other evidence by demonstrating the suspicion of alcohol impairment is consistent with the officer's observations of the subject's mental and physical impairment.

Second, it may confirm the officer's own observations and help gain confidence in evaluating alcohol impairment accurately based on observations and SFSTs. Many officers experienced in DWI enforcement find they rely less and less on the PBT as their confidence in their own skills of detection increases.

Third, it may disclose the possibility of medical complications or impairment due to drugs other than alcohol. The PBT can confirm or deny 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 the subject has ingested a drug other than alcohol or suffers from a medical problem.

Lastly, where permissible, it can 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.

Session 7 – Phase Three: Pre-Arrest Screening

Preliminary Breath Testing Limitations

- **Evidentiary** – vary with specific laws
- **Accuracy** – must be used properly

DWI DETECTION & SFST 7-28

Slide 28.

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

Session 7 – Phase Three: Pre-Arrest Screening

Possible Factors Affecting High Preliminary Breath Testing

- Residual mouth alcohol
- Breath contaminants



DWI DETECTION & SFST 7-29

Slide 29.

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

Residual Mouth Alcohol – After a person takes a drink, some of the alcohol will remain in the mouth. If the person exhales soon after drinking, the breath sample will pick up some of this leftover 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 be eliminated from the mouth. The only sure way to eliminate this factor is to make sure the subject does not consume any alcohol for at least 15 to 20 minutes before conducting a breath test. Remember, too, most mouthwashes, breath sprays, cough syrups, etc., contain alcohol and may produce residual mouth alcohol. Therefore, do not permit the subject to put anything in their mouth for at least 15 to 20 minutes prior to testing.

Breath Contaminants – Some types of PBTs might react to certain substances other than alcohol. For example, substances such as ether, chloroform, acetone, acetaldehyde, and cigarette smoke may 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 (bad breath), food odors, etc., do not affect accuracy.

Session 7 – Phase Three: Pre-Arrest Screening

Possible Factors Affecting Low Preliminary Breath Testing

- Breath sample cooling
- Breath sample composition



DWI DETECTION & SFST 7-30

Slide 30.

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

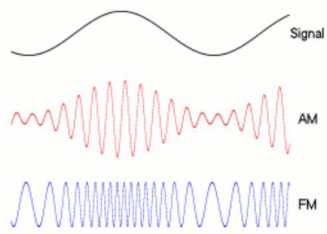
Breath Sample Cooling – If the captured breath sample is allowed to cool before it is analyzed, some of the alcohol vapor in the breath may turn to liquid and precipitate out of the sample. If that happens, the subsequent analysis of the breath sample will produce a low BAC result.

Breath Sample Composition – 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.

Session 7 – Phase Three: Pre-Arrest Screening

Possible Factor Affecting Either High or Low Preliminary Breath Testing

Radio frequency interference



The diagram illustrates three types of radio frequency waves. The top wave is a smooth, black sine wave labeled 'Signal'. Below it is a red wave labeled 'AM' (Amplitude Modulation), which shows a high-frequency carrier wave whose amplitude varies in a sinusoidal pattern. The bottom wave is a blue wave labeled 'FM' (Frequency Modulation), which shows a high-frequency carrier wave whose frequency varies in a sinusoidal pattern.

DWI DETECTION & SFST 7-31

Slide 31.

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.

F. The Arrest Decision



Your arrest/no arrest decision is the culmination of the DWI detection process. That decision is based on all of the evidence that has come to light since your attention was first drawn to the vehicle or individual.

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
- PBTs

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 a DWI offense has been committed, you should arrest the subject.



Questions?

Slide 33.

Session 7 – Phase Three: Pre-Arrest Screening

Test Your Knowledge

1. The two major evidence gathering tasks of Phase Three are _____ and _____
2. The major decision in Phase Three is _____
3. The entire DWI detection process culminates in _____
4. Divided attention tests require the subject to _____

DWI DETECTION & SFST 7-34

Slide 34.

Test Your Knowledge

1. The two major evidence gathering tasks of Phase Three are _____ and _____.
 2. The major decision in Phase Three is _____
 3. The entire DWI detection process culminates in _____
 4. Divided attention tests require the subject to _____
-



Test Your Knowledge

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 WAT are:

- A.
- B.

Slide 35.

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 WAT are:

- A. _____
- B. _____

Session 7 – Phase Three: Pre-Arrest Screening

Test Your Knowledge

7. The two stages of the OLS are:

- A.
- B.

8. The purpose of PBT is _____

9. Two factors that produce high results on a PBT are:

- A.
- B.

DWI DETECTION & SFST 7-36

Slide 36.

7. The two stages of the OLS are:
- A. _____
- B. _____
8. The purpose of PBT is _____
9. Two factors that produce high results on a PBT are:
- A. _____
- B. _____
-

Session 7 – Phase Three: Pre-Arrest Screening

Test Your Knowledge

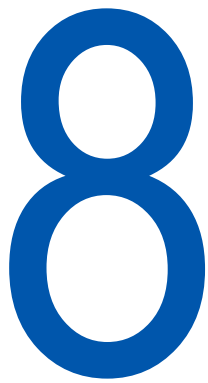
10. Two factors that produce low results on a PBT are:

- A.
- B.

DWI DETECTION & SFST 7-37

Slide 37.

10. Two factors that produce low results on a PBT are:
- A. _____
- B. _____
-



SFST

Concepts and Principles of the Standardized Field Sobriety Tests (SFSTs)

LEARNING OBJECTIVES

- Discuss the development and validity of the research and the standardized elements, clues, and interpretation of the three Standardized Field Sobriety Tests (SFSTs)
- Discuss the different types of nystagmus and their effects on the Horizontal Gaze Nystagmus (HGN) test
- Discuss and properly administer the three SFSTs
- Discuss and properly recognize the clues of the three SFSTs
- Describe in a clear and convincing manner and properly record the results of the SFSTs on a standard note-taking guide
- Identify the limitations of the three SFSTs

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LEARNING ACTIVITIES

- Instructor-Led Demonstration
- Participant Practice Session
- Demonstration



Learning Objectives

- Discuss development and validity of research and standardized elements, clues, and interpretation of the three SFSTs
- Discuss different types of nystagmus and their effects on HGN test



DWI DETECTION & SFST

8-2

Slide 2.

Learning Objectives

- Discuss and properly administer the three SFSTs
- Discuss and properly recognize clues of the three SFSTs
- Describe and properly record results of the three SFSTs on standard note-taking guide
- Identify limitations of the three SFSTs



DWI DETECTION & SFST

8-3

Slide 3.

A. Overview: Development and Validation

Session 8 – Concepts and Principles of the SFSTs

Overview: Development and Validation

- NHTSA research began in 1975 in California
- Three final reports published
 - California: 1977 (lab study only)
 - California: 1981 (lab/field study)
 - Maryland, Washington, DC, Virginia, North Carolina: 1983 (field study only)

DWI DETECTION & SFST8-4

Slide 4.

For many years, law enforcement officers have utilized field sobriety tests to determine a driver's impairment due to alcohol influence. The performance of the driver 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 valid SFSTs. Beginning in late 1975, extensive scientific research studies were sponsored by the National Highway Traffic Safety Administration (NHTSA) through a contract with the Southern California Research Institute (SCRI) to determine which roadside field sobriety tests were the most accurate. SCRI published the following three reports: (1) California: 1977 (Lab); (2) California: 1981 (Lab and Field); (3) Maryland, District of Columbia, Virginia, North Carolina: 1983 (Field).

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Original Research Objectives



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Slide 5.

The original research objectives were to evaluate currently used physical coordination tests to determine their relationship to intoxication and driving impairment, develop more sensitive tests that would provide more reliable evidence of impairment, and standardize the tests and observations.

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Volunteers Were Subjected to Six Tests

- One Leg Stand
- Finger-to-Nose
- Finger Count
- Walk and Turn
- Tracing
- Nystagmus



DWI DETECTION & SFST8-6

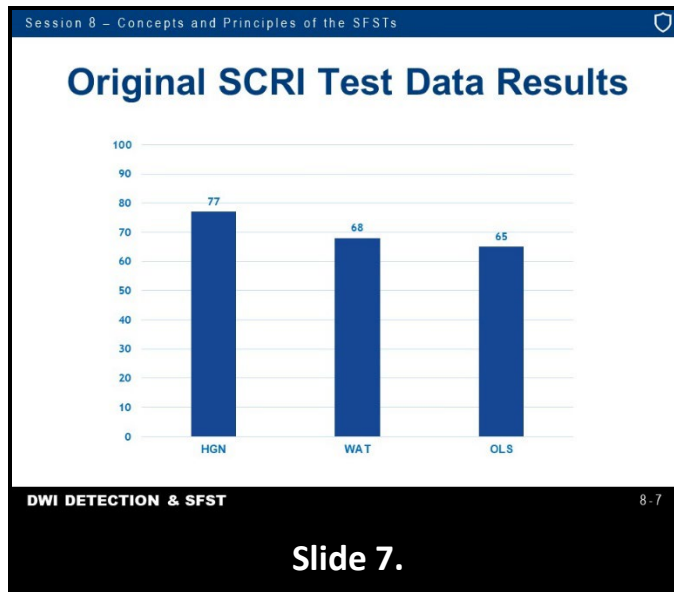
Slide 6.

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.

1. One Leg Stand (OLS)
2. Finger-to-Nose (FTN)
3. Finger Count
4. Walk and Turn (WAT)
5. Tracing (a paper and pencil exercise)
6. Nystagmus (called alcohol gaze nystagmus in final report)

Laboratory research indicated three of these tests, when administered in a standardized manner, were highly accurate and reliable tests for distinguishing blood alcohol concentrations (BACs) at or above 0.10; HGN, WAT, and OLS. The research showed these three tests were the most accurate and the remaining tests were merely reassessing the same skills.

While many field sobriety tests are valid tests, the SFSTs have been validated through numerous research studies.



NHTSA analyzed the original SCRI research laboratory test data and found HGN, by itself, was 77% accurate, WAT, by itself, was 68% accurate, and OLS, by itself, was 65% accurate.

B. SFST Field Validation Studies

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Third Phase: Field Validation and Standardization Objectives

- Standardized, practical, and effective procedures
- Determine feasibility of procedures in enforcement conditions
- Determine if tests discriminate in field as well as in laboratory

DWI DETECTION & SFST 8-8

Slide 8.

In 1983, the final phase of this research was conducted as a field validation study in Maryland, Washington D.C., Virginia, and North Carolina.

- Standardized, practical, and effective procedures were developed
 - Determine the feasibility of the procedures for these tests in actual enforcement conditions
 - The tests were determined to discriminate in the field as well as in the laboratory
-

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Standardized Elements

- Administrative Procedures
- Clues
- Criteria



DWI DETECTION & SFST 8-9

Slide 9.

The three standardized tests were found to be highly reliable in identifying subjects whose BACs were at or above 0.10. The results of the study unmistakably validated the SFSTs. The “Standardized” elements included Standardized Administrative Procedures, Standardized Clues, and Standardized Criteria.

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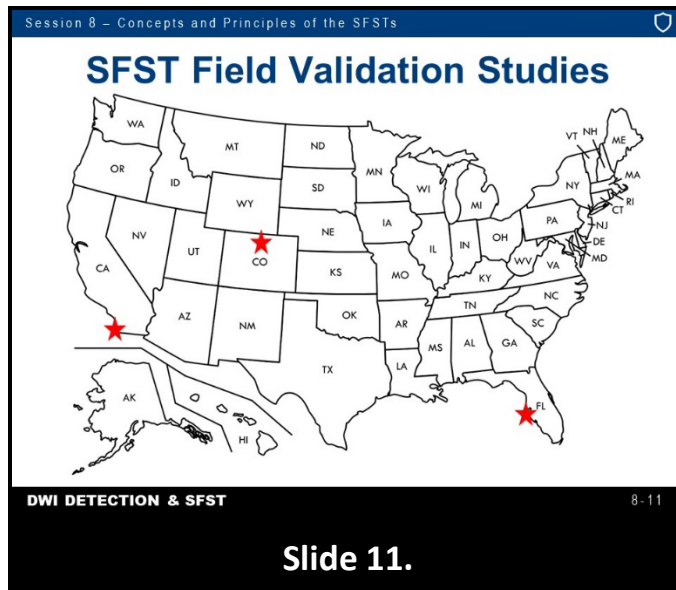
Importance of Large Scale Field Validation Study

- First significant assessment of workability under actual enforcement conditions
- First time completely objective clues and recording criteria had been defined for tests
- Results of study validated SFSTs

DWI DETECTION & SFST 8-10

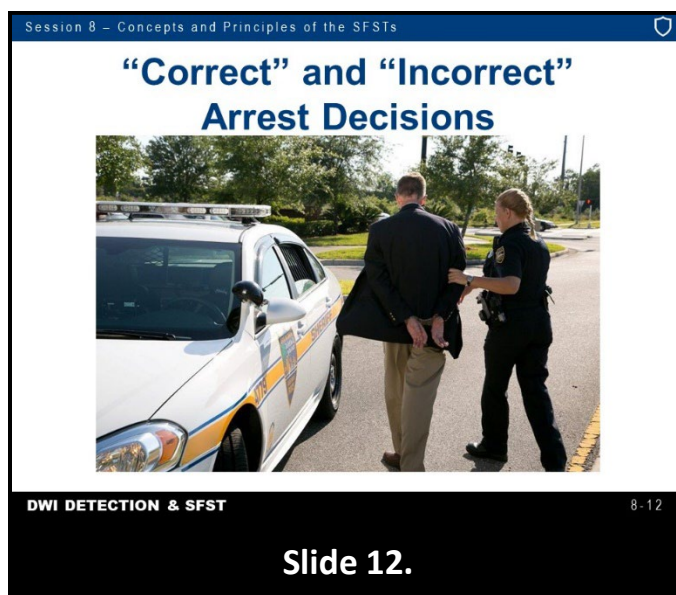
Slide 10.

The large-scale field validation study was the first significant assessment of the workability of the new standardized tests under actual enforcement conditions. It was also the first time completely objective clues and recording criteria had been defined for these tests. The results of this study validated the SFSTs.



Three SFST validation studies were undertaken between 1995 and 1998. These were Colorado – 1995, Florida – 1997, and San Diego – 1998.

C.

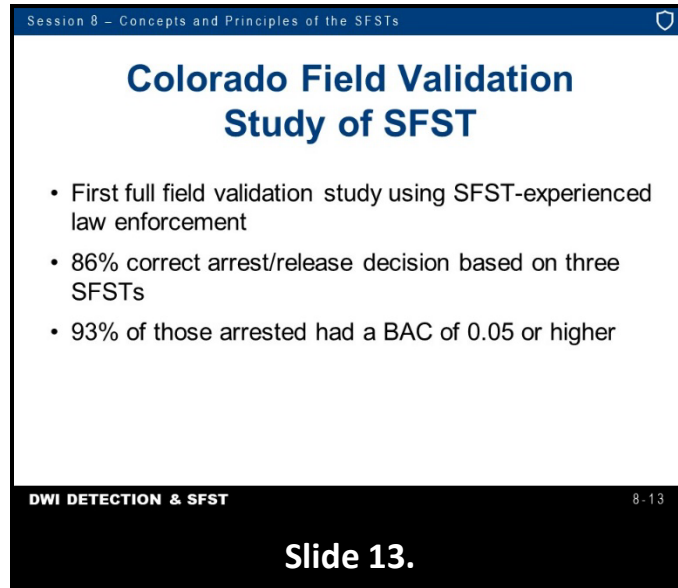


In order to understand the results of the research studies discussed in this course, it is important to define what is meant by a correct arrest decision. A correct arrest decision is made when an officer, after completing the third phase of the detection process, decides to arrest a subject and that subject tested above the per se limit for BAC, or the officer decides to release a subject who is below the per se limit for BAC. The remaining subjects, incorrect arrest decisions, fall into two other categories. Members of the first group were not arrested but tested above the per se limit for BAC. The Colorado Study noted a number (approximately 33%) of these individuals were considered alcohol tolerant and performed well on the SFSTs even though

their BACs were above the per se limit. Although these release decisions were recorded as errors based on the procedures outlined in the study, this non-arrest decision ultimately benefited the driver.

For purposes of this study, the subjects who were arrested, but their BAC was below the per se limit, were also considered incorrect arrests. Many States stipulate in their statute a driver is considered DWI if they are either above the per se limit for BAC or are impaired. Even though these arrests are legally justifiable according to an individual State's statute, these decisions are recorded as errors in the research based on the procedures outlined in the study.

Each of these studies have shown the SFSTs are scientifically validated and are a reliable method for distinguishing between impaired and unimpaired drivers. It is important for the officer who is trained in SFST to prepare themselves to understand and explain these statistics in layman terms in order to effectively articulate them to a jury in a courtroom. Remember, if you do not know the answer to a defense question you can say, "I DON'T KNOW."



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Colorado Field Validation Study of SFST

- First full field validation study using SFST-experienced law enforcement
- 86% correct arrest/release decision based on three SFSTs
- 93% of those arrested had a BAC of 0.05 or higher

DWI DETECTION & SFST 8-13

Slide 13.

The Colorado SFST Validation Study was the first full field study that utilized law enforcement personnel experienced in the use of SFSTs. The initial 1977 study utilized only a few experienced officers in DWI enforcement in both a laboratory setting and field setting. These officers received approximately four hours of training in field sobriety testing prior to the laboratory study. In the Colorado study, correct arrest/release decisions were 86% accurate based on the three SFSTs (HGN, WAT, OLS) and 93% of arrested drivers had a BAC of 0.05 or higher. These results, by officers who were trained in the SFST curriculum, were higher than the initial 1977 study results.

Source:

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

Session 8 – Concepts and Principles of the SFSTs

Florida Field Validation Study of SFST

- 95% correct arrest decision based on three SFSTs
- Validated SFSTs at 0.08 BAC and above

DWI DETECTION & SFST 8-14

Slide 14.

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. Correct decisions to arrest were made 95% of the time based on the three SFSTs (HGN, WAT, OLS). This was the second SFST field validation study undertaken. This study was the first study conducted at the lower BAC limit of 0.08.

Source:

Burns, M., & Dioquino, T. (1997). *A Florida Validation Study of the Standardized Field Sobriety Test (SFST) Battery*. National Highway Traffic Safety Administration.

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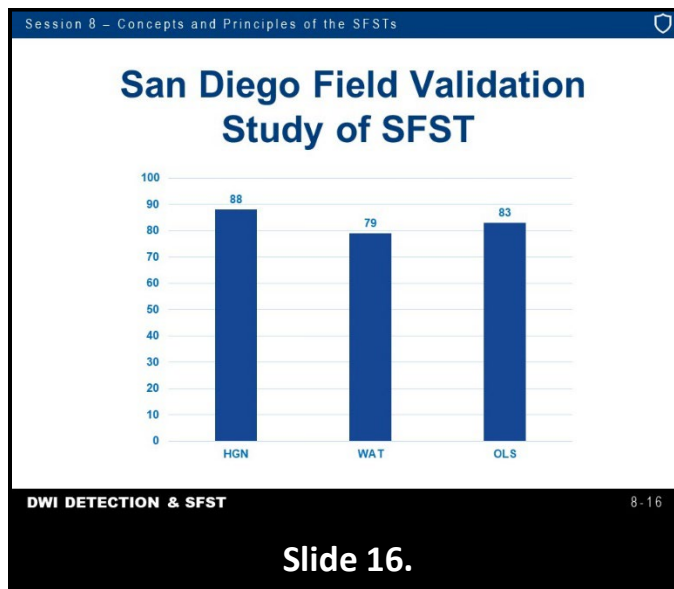
San Diego Field Validation Study of SFST

- 91% correct-arrest decision for 0.08 BAC and above using three SFSTs
- HGN is still most reliable of three SFSTs and supports arrest decisions at 0.08 BAC

DWI DETECTION & SFST 8-15

Slide 15.

The San Diego SFST validation field study was undertaken because of the nationwide trend towards lowering the BAC limits to 0.08. The question to be answered was “Do SFSTs discriminate at BACs below 0.10%?” The study examined the validity of SFSTs for both .08% and .04%. Correct arrest decisions were made 91% of the time based on the three SFSTs (HGN, WAT, OLS) at the 0.08 level and above. This is the most current research used to describe the accuracy of the SFSTs.



- HGN was 88% accurate
- WAT was 79% accurate
- OLS was 83% accurate

The results of this study provide clear evidence of the validity of the three-tests to support arrest decisions at above or below 0.08. It strongly suggests the SFSTs also identify BACs at 0.04 and above.

Results: Three SFST 1990's Field Studies	
Study	% Correct
Colorado	86% Arrest/Release Decisions
Florida	95% Arrest Decisions
San Diego	91% Arrest Decisions

It is necessary to emphasize this validation applies only when the tests are administered in the prescribed and standardized manner, the standardized clues are used to assess the subject's performance, and the standardized criteria are employed to interpret that performance. If any one of the SFST elements is changed, the validity may be compromised.

Source:

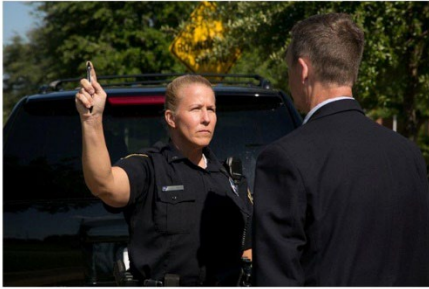
Stuster, J., & Burns, M. (1998, August). *Validation of the Standardized Field Sobriety Test Battery at BACs Below 0.10 Percent*. Santa Barbara, CA: Anacapa Sciences, Inc.

D. Horizontal Gaze Nystagmus

Session 8 – Concepts and Principles of the SFSTs

Horizontal Gaze Nystagmus

Involuntary jerking of eyes, occurring as eyes gaze to the side



DWI DETECTION & SFST 8-17

Slide 17.

Definition Review: Involuntary jerking of the eyes, occurring as the eyes gaze to the side. In addition to being involuntary, the person is usually unaware it is happening, and the person is unable to control it.

Key Summary Point: Alcohol and certain other drugs cause HGN.

Session 8 – Concepts and Principles of the SFSTs

Categories of Nystagmus

- Vestibular
- Neural
- Pathological Disorders and Diseases

DWI DETECTION & SFST 8-18

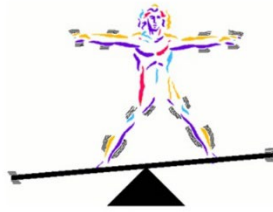
Slide 18.

HGN is not the only kind of nystagmus. There are other circumstances under which the eyes will jerk involuntarily. It is important to know some of the other common types of nystagmus and to be aware of their potential impact on field sobriety tests. Nystagmus of several different origins may be seen. The three general categories of nystagmus are Vestibular, Neural, and Pathological Disorders and Diseases.

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Vestibular Nystagmus

- Rotational
- Post Rotational
- Caloric
- Positional Alcohol Nystagmus



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Slide 19.

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

The HGN test will not be influenced by Vestibular Nystagmus when administered properly.

Types of Vestibular Nystagmus are:

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

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

Neither Rotational nor Post Rotational Nystagmus will interfere with the HGN test because of the conditions under which they occur.

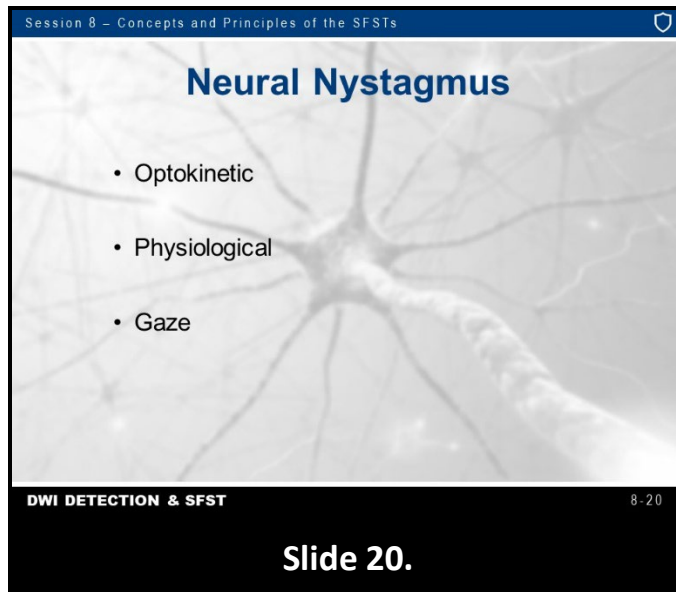
Caloric Nystagmus occurs when fluid motion in the canals of the vestibular system is stimulated by temperature as by putting warm water in one ear and cold in the other.

Positional Alcohol Nystagmus (PAN) occurs when a foreign fluid, such as alcohol, that alters the specific gravity of the blood, is in unequal concentrations in the blood and the vestibular system. This causes the vestibular system to respond to gravity in certain head positions, resulting in nystagmus. By administering HGN with the head in line with the spine, PAN should not occur.

In the original HGN study, research was not conducted for performing HGN on people lying down. Current research demonstrates HGN can be performed on someone in this position. A person who is secured to a back board, partially upright on a gurney, or is seated upright, provided their head is in line with the spine, should not display PAN.

Source:

Citek, K., Ball, B., & Rutledge, D.A. (2003, November). Nystagmus Testing In Intoxicated Individuals. *Optometry*, 74(11), 695-710.



Nystagmus can also result directly from neural activity. 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 HGN test will not be influenced by Optokinetic Nystagmus when administered properly. During the HGN test, the subject is required to fixate the eyes on a penlight, pencil, or similar object that moves in accordance with the HGN testing procedures, thus Optokinetic Nystagmus will not occur. The movement of the stimulus and the fixation on the stimulus by the subject precludes this form of nystagmus from being observed by the officer.

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 usually too small to be seen with the naked eye. Physiological Nystagmus will not be mistaken for HGN.

Gaze Nystagmus is a form of nystagmus that occurs when the eyes attempt to maintain visual fixation on a stimulus.

Session 8 – Concepts and Principles of the SFSTs

Gaze Nystagmus

- Horizontal
- Vertical
- Resting



DWI DETECTION & SFST 8-21

Slide 21.

For our purposes, Gaze Nystagmus is separated into three types which are Horizontal, Vertical, and Resting.

Session 8 – Concepts and Principles of the SFSTs

Horizontal Gaze Nystagmus

- Involuntary jerking of eyes, occurring as eyes gaze to side



DWI DETECTION & SFST 8-22

Slide 22.

Horizontal Gaze Nystagmus is an involuntary jerking of the eyes, occurring as the eyes gaze to the side. It is the observation of the eyes for Horizontal Gaze Nystagmus that provides the first and most accurate test in the SFSTs. Although this type of nystagmus is indicative of alcohol impairment, its presence may also indicate use of certain other drugs. Examples of other drug categories are CNS Depressants, Inhalants, and Dissociative Anesthetics such as PCP and its analogs.

Source:

(1999). *Horizontal Gaze Nystagmus: The Science and the Law: A Resource Guide for Judges, Prosecutors and Law Enforcement*. National Traffic Law Center. National Highway Traffic Safety Administration. Retrieved from https://www.nhtsa.gov/sites/nhtsa.gov/files/documents/horizontal_gaze_nystagmus-the_science_and_the_law.pdf

Any deficiency in eye movement, especially if it is acquired or of recent onset, can impair a person's ability to see properly. Drug impairment, including from alcohol, can affect eye movements in several ways, depending on the nature of the intoxicant used. Drug use, including alcohol, is understood to cause physiological changes that are acquired.

Source:

Leigh, R., & Zee, D. (2015). *The Neurology of Eye Movements, Fifth Edition*. Oxford University Press.

Session 8 – Concepts and Principles of the SFSTs

Vertical Gaze Nystagmus

Involuntary jerking of eyes (up and down)



DWI DETECTION & SFST 8-23

Slide 23.

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. It may also be present with certain other drugs. The drugs that cause VGN are the same ones that cause HGN. There is no known drug that will cause VGN without causing at least four clues of HGN. If VGN is present and HGN is not, it could be a medical condition. For VGN to be recorded, it must be distinct and sustained for a minimum of four seconds at maximum elevation.

Session 8 – Concepts and Principles of the SFSTs

Resting Nystagmus

Jerking of eyes as they look straight ahead



DWI DETECTION & SFST 8-24

Slide 24.

Resting Nystagmus is referred to as a jerking of the eyes as they look straight ahead. Its presence usually indicates a medical condition or high doses of a Dissociative Anesthetic drug.

Session 8 – Concepts and Principles of the SFSTs

Pathological Disorder Nystagmus

- Brain tumors and other brain damage
- Some inner ear diseases
- Rare in the driving population

DWI DETECTION & SFST 8-25

Slide 25.

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. Congenital nystagmus is developed at birth and up to six months, while acquired nystagmus may be caused later in life from medical conditions and/or alcohol or drugs.

Individuals with a long-standing abnormality or deficiency in eye movements often learn to compensate in some manner. One example includes making a head movement rather than an eye movement when someone has a natural lack of smooth pursuit, not due to intoxication, illness, or trauma. Likewise, someone who has a constant and long-standing nystagmus may be able to detect and extract visual information between successive eye movements. Therefore, while the appearance to the officer may be abnormal, the person is not necessarily impaired.

Session 8 – Concepts and Principles of the SFSTs

Medical Impairment

Even though the possibility of alcohol and/or drug impairment exists, be aware of medical conditions having symptoms in common with alcohol influence.



DWI DETECTION & SFST 8-26

Slide 26.

Even though the possibility of alcohol and/or drug impairment exists, officers should be aware of medical conditions having symptoms in common with alcohol influence. By passing a stimulus across both eyes, you can check to see if both eyes are tracking equally. If they don't (i.e., if one eye tracks the stimulus, but the other fails to move or lags behind the stimulus) there is the possibility of a neurological disorder. If a person has sight in both eyes, but the eyes fail to track together, there is a possibility the person is suffering from an injury or illness affecting the brain.

Session 8 – Concepts and Principles of the SFSTs

Horizontal Gaze Nystagmus Medical Impairment Assessment Procedures

Check eyes for:

- Equal Pupil Size
- Resting Nystagmus
- Equal Tracking



DWI DETECTION & SFST 8-27

Slide 27.

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 may be present. If the eyes track together, continue with the test and document the results.

Pupil size may be affected by some medical conditions or injuries. If the two pupils are distinctly different in size, it is possible the subject:

- Has a prosthetic eye
- Is suffering from a head injury
- Has a neurological disorder

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 a Dissociative Anesthetic. Resting Nystagmus may also be a medical problem. Tracking ability may be affected by certain medical conditions or injuries involving the brain.

This observation is a medical assessment. If the two eyes do not track together, the possibility of a serious medical condition or injury is present. Officers are reminded to ask questions about the subject's eye and general health conditions prior to administering the HGN test. If a subject responds or volunteers information that he or she is blind in one eye or has an artificial eye, and the subject has equal tracking, the officer should make note of the abnormality and proceed with the HGN test. If there are any abnormal findings on the pre-test checks, the officer may choose not to continue with the testing. If HGN testing is continued, officers are reminded this does not follow the standardized protocol and should acknowledge such in any report.

If HGN testing is conducted on a person with a blind eye, typical inconsistent findings could be related to the blind eye not being able to see or track the stimulus, or when the normal eye can no longer see the stimulus, e.g., when checking Distinct and Sustained Nystagmus at Maximum Deviation on the blind eye side.

Source:

Citek, K. (2014). *Eye Tests on a Suspect with a Blind Eye*. Pacific University College of Optometry.

Session 8 – Concepts and Principles of the SFSTs

Horizontal Gaze Nystagmus Testing: Three Clues

- Lack of Smooth Pursuit
- Distinct and Sustained Nystagmus at Maximum Deviation
- Onset of Nystagmus Prior to 45 Degrees

DWI DETECTION & SFST 8-28

Slide 28.

The HGN test is comprised of three separate components: Lack of Smooth Pursuit, Distinct and Sustained Nystagmus at Maximum Deviation, and Onset of Nystagmus Prior to 45 Degrees. This test may provide important indicators of alcohol and drug use.

The first recommended test you will use at roadside is HGN – an involuntary jerking of the eyes occurring as the eyes gaze to the side. When a person is impaired by alcohol or certain drugs, some jerking will be seen if the eyes are moved far enough to the side.

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 impaired person will not follow smoothly, i.e., windshield wipers moving across a dry windshield. While not an actual Gaze Nystagmus, Lack of Smooth Pursuit is a validated clue in the HGN test.

Distinct and Sustained Nystagmus at Maximum Deviation (Clue Number Two) – Distinct and sustained nystagmus is evident when the eye is held at maximum deviation for a minimum of four seconds and continues to jerk toward the side.

Onset of Nystagmus Prior To 45 Degrees (Clue Number Three) – The jerking of the eye begins prior to the stimulus reaching an approximate 45-degree angle.

Session 8 – Concepts and Principles of the SFSTs

Administrative Procedures

1. Check for eyeglasses
2. Verbal instructions
3. Position stimulus (12-15 inches and slightly above eye level)
4. Check for Equal Pupil Size and Resting Nystagmus
5. Check for Equal Tracking

DWI DETECTION & SFST 8-29

Slide 29.

Session 8 – Concepts and Principles of the SFSTs

Administrative Procedures

6. Lack of Smooth Pursuit
7. Distinct and Sustained Nystagmus at Maximum Deviation
8. Onset of Nystagmus Prior to 45 Degrees
9. Total the clues
10. Check for Vertical Nystagmus

DWI DETECTION & SFST 8-30

Slide 30.

HGN

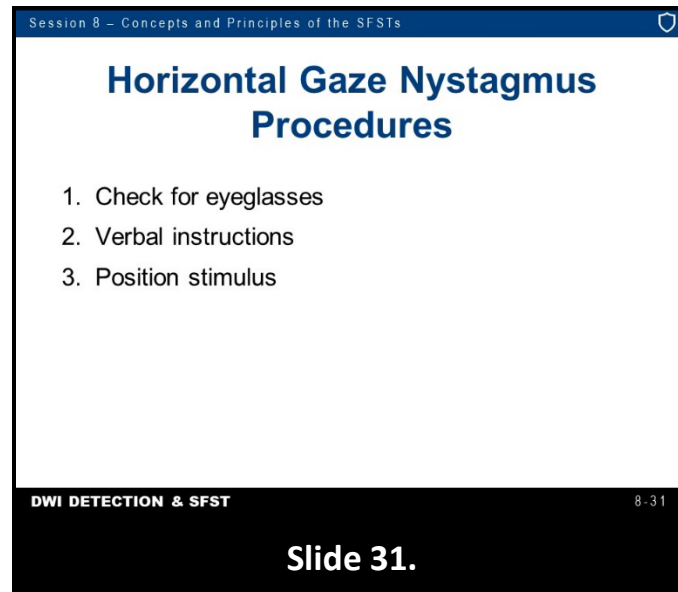
HGN and VGN can be observed directly and does not require special equipment. You will need a contrasting stimulus for the subject to follow with their eyes. This can be a penlight, pen, or similar object. The stimulus used should be held slightly above eye level, so the eyes are wide open when they look 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 subject at all times.

OFFICER SAFETY IS THE NUMBER ONE PRIORITY ON ANY TRAFFIC STOP.

Administrative Procedures

1. Check for eyeglasses
2. Verbal instructions
3. Position stimulus (12-15 inches and slightly above eye level)
4. Check for Equal Pupil Size and Resting Nystagmus

5. Check for Equal Tracking
 6. Lack of Smooth Pursuit
 7. Distinct and Sustained Nystagmus at Maximum Deviation
 8. Onset of Nystagmus Prior to 45 Degrees
 9. Total the clues
 10. Check for Vertical Nystagmus
-



It is important to administer the HGN test systematically using the following steps to ensure nothing is overlooked.

Step 1: Check for Eyeglasses (Note if subject wears contacts especially colored contacts because some colored contacts may affect the ability to compare pupil size). Begin by instructing the subject to remove eyeglasses, if worn.

It does not matter whether the subject can see the stimulus with perfect clarity. The subject just needs to see it and be able to follow it.

Step 2: Verbal instructions. Give the subject the appropriate verbal instructions:

- Put feet together, arms down at the side
- Keep head still
- Look at the stimulus
- Follow movement of the stimulus with the eyes only
- Keep looking at the stimulus until told the test is over

Step 3: Position the Stimulus. Position the stimulus approximately 12 - 15 inches (30 - 38 cm) in front of subject's nose and slightly above eye level to commence the test. Resting Nystagmus may be observed at this time. Officers should note whether the subject displays Resting Nystagmus.

Session 8 – Concepts and Principles of the SFSTs

Horizontal Gaze Nystagmus Procedures

4. Equal Pupil Size and Resting Nystagmus
5. Equal Tracking

DWI DETECTION & SFST 8-32

Slide 32.

Step 4: Equal Pupil Size and Resting Nystagmus. Check for Equal Pupil Size and Resting Nystagmus.

Step 5: Equal Tracking. Check for Equal Tracking. Move the stimulus from center to far right, to far left, and back to center. The speed of the stimulus should be approximately the same speed used as checking for the Lack of Smooth Pursuit. This check may be done more than once.

There should be a clear, distinguishable break between the check for Equal Tracking and Lack of Smooth Pursuit.

If there are any abnormal findings on the pre-test checks, the officer may choose not to continue with the testing. If HGN testing is continued, officers are reminded this does not follow the standardized protocol and should acknowledge such in any report.

Session 8 – Concepts and Principles of the SFSTs

Horizontal Gaze Nystagmus Procedures

6. Check for Lack of Smooth Pursuit
7. Check for Distinct and Sustained Nystagmus at Maximum Deviation
8. Check for Onset of Nystagmus Prior to 45 Degrees

DWI DETECTION & SFST 8-33

Slide 33.

Step 6: Lack of Smooth Pursuit. Check the left eye for lack of the "Smooth Pursuit" clue. If the eye is observed to jerk while moving, that is one clue. Check the right eye for lack of the "Smooth Pursuit" clue and compare. Check each eye at least twice.

Step 7: Check the right and left eye for the "Distinct and Sustained Nystagmus at Maximum Deviation" clue. If the jerkiness is distinct and sustained, that is one clue. Check each eye at least twice.

Step 8: Onset of Nystagmus Prior to 45 Degrees. Check the left eye for the "Onset of Nystagmus Prior to 45 Degrees" clue. If the jerking begins prior to an approximate 45-degree angle, that is one clue.

Check the right eye for "Onset of Nystagmus Prior to 45 Degrees" clue and compare. Check each eye at least twice.

Session 8 – Concepts and Principles of the SFSTs

Horizontal Gaze Nystagmus Procedures

9. Total the clues
10. Check for Vertical Gaze Nystagmus

DWI DETECTION & SFST 8-34

Slide 34.

Step 9: Total the clues. Maximum number of clues possible for each eye: 3. Total maximum number of clues possible for both eyes: 6

It is possible all three clues definitely will be found in one eye, while only two (or sometimes only one) will show up in the other eye. It is always necessary to check both eyes and to check them independently. Notwithstanding, it is unlikely the eyes of someone under the influence of alcohol will behave totally different. Thus, if one eye shows all three clues distinctly while the other eye gives no evidence of nystagmus, the person may be suffering from one of the pathological disorders covered previously.

Step 10: Check for Vertical Nystagmus. The VGN test is simple to administer. During the VGN test, look for jerking as the eyes gaze up and are held for a minimum of four seconds at maximum elevation. Position the stimulus horizontally and instruct the subject to hold their head still and follow the stimulus with the eyes only. Raise the stimulus until the subject's eyes are elevated as far as possible and hold for a minimum of four seconds. Watch closely for evidence of the eyes jerking upward. The jerking must be definite, distinct and sustained.

Session 8 – Concepts and Principles of the SFSTs

Test Interpretation

Look for three clues of nystagmus in each eye:

- Lack of Smooth Pursuit
- Distinct and Sustained Nystagmus at Maximum Deviation
- Onset of Nystagmus Prior to 45 Degrees

DWI DETECTION & SFST 8-35

Slide 35.

You should look for three clues of nystagmus in each eye.

- Lack of Smooth Pursuit (The eye cannot follow a moving object smoothly)
- Distinct and Sustained Nystagmus at Maximum Deviation (nystagmus is distinct and sustained when the eye is held at maximum deviation for a minimum of four seconds)
- Onset of Nystagmus Prior to 45 Degrees

Based on recent research, if you observe four or more clues it is likely the subject's BAC is at or above 0.08. Using this criterion, you will be able to classify about 88% of your subjects accurately. This was determined during laboratory and field testing and helps you weigh the various SFSTs as you make your arrest decision.

Session 8 – Concepts and Principles of the SFSTs

Three Clues of Horizontal Gaze Nystagmus

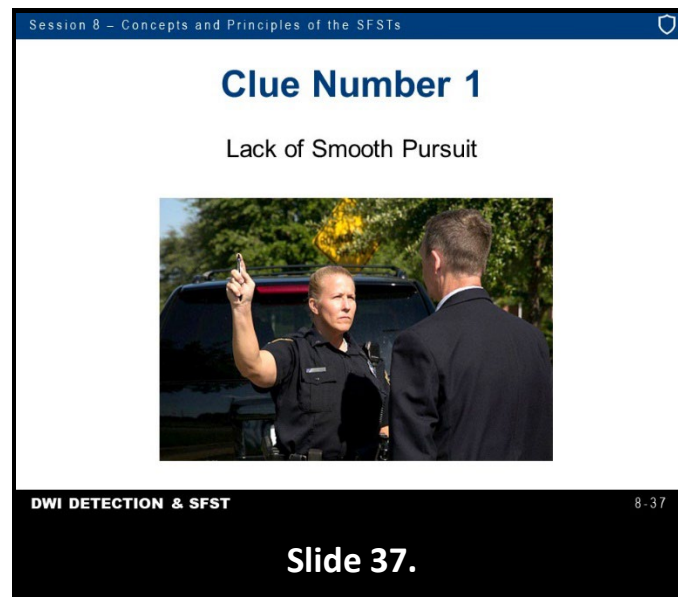
- Lack of Smooth Pursuit
- Distinct and Sustained Nystagmus at Maximum Deviation
- Onset of Nystagmus Prior to 45 Degrees

DWI DETECTION & SFST 8-36

Slide 36.

When we administer the HGN test, we look for three specific clues as evidence of impairment. We check each eye independently for each clue.

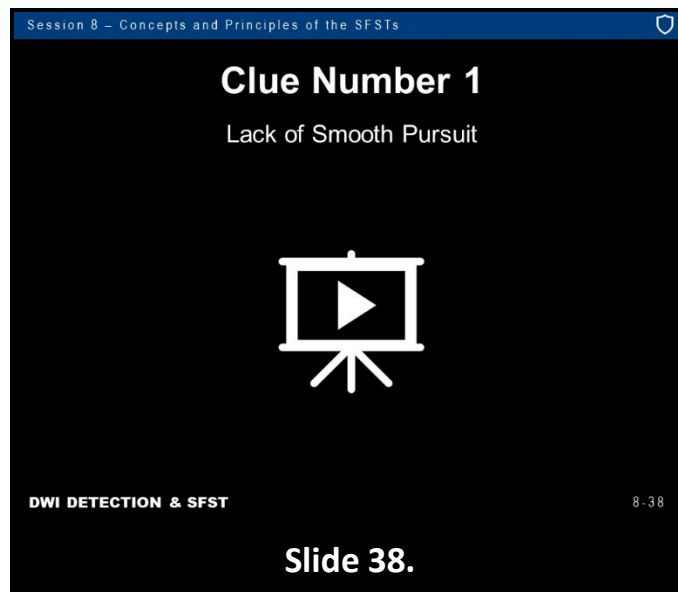
For standardization, begin with the subject's left eye. Check for the first clue. Next, check right eye for same clue. Repeat this procedure for each clue starting with left eye, then right eye. Compare and document the results. When we are checking an eye, it is good practice to administer the test by the numbers each time, to make sure no step is overlooked.



The first clue requires the subject move the eye to follow the motion of a smoothly moving stimulus.

The stimulus may be the eraser on a pencil, the tip of a penlight, the tip of your finger, or any similar small object.

Begin by holding the stimulus vertically approximately 12 - 15 inches (30 - 38 cm) in front of the subject's nose and slightly above eye level.



Move the stimulus smoothly all the way out to the right (checking subject's left eye first). Move the object from center to the side as far as the eye can move. Then move the stimulus smoothly all the way across the subject's face to the left (checking the subject's right eye), then back to center. Carefully watch the subject's left eye then right eye and determine if they are able to pursue smoothly. Make at least two complete passes with the stimulus. The stimulus must be moved in a smooth, continuous manner without stopping at either side or the center while checking for this clue. If a person is not impaired by alcohol (or drugs that cause HGN), the eyes should move smoothly as the object is moved back and forth. Analogy: movement of the eyes of a person not impaired by alcohol (or drugs that cause HGN) will be similar to the movement of windshield wipers across a wet windshield versus an impaired person and windshield wipers moving across a dry windshield.

Lack of smooth pursuit can impair the ability to see details (such as when reading a sign) or make accurate observations (as of the direction and speed of another vehicle) when there is relative motion between the observer and the target (one or the other is moving, or both are moving but at different speeds and/or different directions).

Session 8 – Concepts and Principles of the SFSTs

Mechanics of Clue Number 1

Move object steadily at a speed that takes approximately 2 seconds to bring the eye from center to side

DWI DETECTION & SFST 8-39

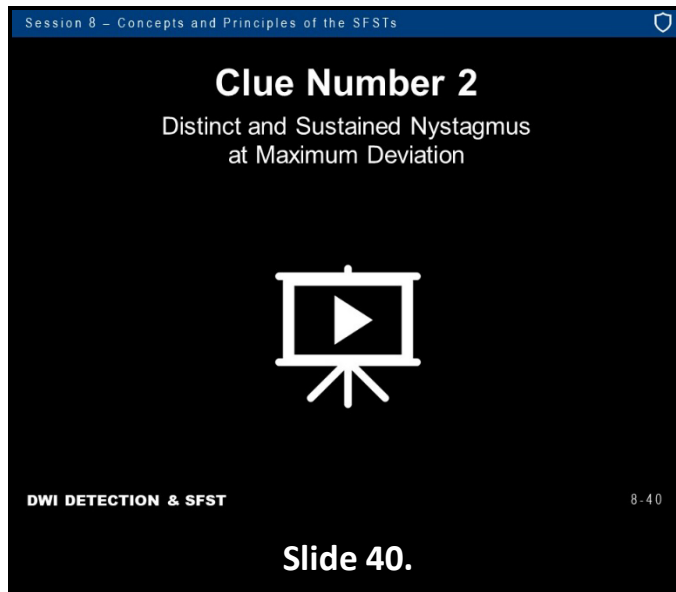
Slide 39.

It is necessary to move the object smoothly in order to check the eye's ability to pursue smoothly. The stimulus should be moved from center position, all the way out to the right (checking subject's left eye) where the eye can go no further, and then all the way back across subject's face all the way out to the left where the eye can go no further (checking subject's right eye) and then back to the center.

The object must be moved steadily, at a speed that takes approximately 2 seconds to bring the eye from center to side.

In checking for this clue, make at least two complete passes in front of the eyes.

If you are still not able to determine whether or not the eye is jerking as it moves, additional passes may be made in front of the eyes.



Once you have completed the check for Lack of Smooth Pursuit, you will check the eyes for distinct and sustained nystagmus when the eye is held at maximum deviation, beginning with the subject's left eye.

The Mechanics of Clue Number 2: Once again, position the stimulus approximately 12 - 15 inches (30 - 38 cm) in front of subject's nose and slightly above eye level.

Move the stimulus off to the right (checking subject's left eye) until the eye has gone as far as possible.

Hold the stimulus steady at that position for a minimum of four (4) seconds and carefully watch the eye.

Then, move the stimulus back across the subject's face all the way out to the left (subject's right eye).



Clue Number 2

Distinct and Sustained Nystagmus
at Maximum Deviation



DWI DETECTION & SFST

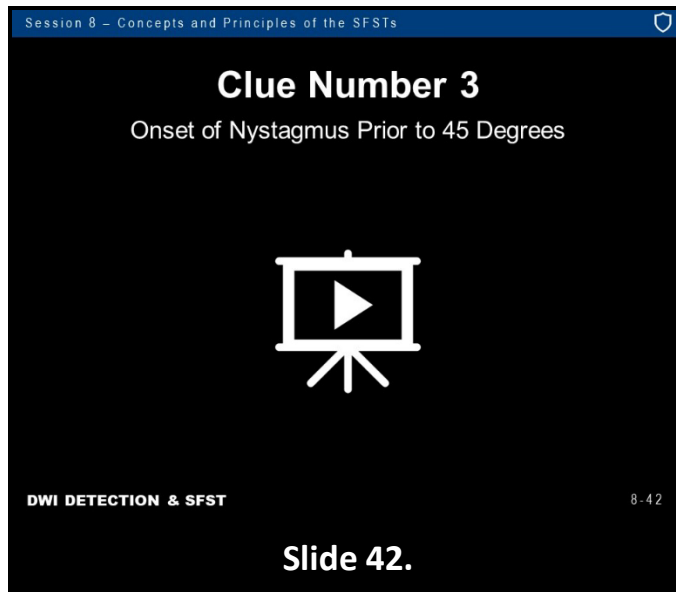
8-41

Slide 41.

Hold the stimulus steady and carefully watch the eye. If the person is impaired, the eye is likely to exhibit distinct and sustained jerking when held at maximum deviation for a minimum of 4 seconds. This type of nystagmus is different from fatigue nystagmus. Fatigue nystagmus is a result of the tiring of the eye muscles when the eyes are held at maximum deviation for at least 30 seconds. Four seconds will not cause fatigue nystagmus.

In order to "count" this clue as evidence of impairment, the nystagmus must be distinct and sustained for a minimum of 4 seconds. If you think you see only slight nystagmus at this stage of the test or if you have to convince yourself nystagmus is present, then it isn't really there.

A subject with distinct and sustained nystagmus at maximum deviation, as a result of alcohol or drug impairment, experiences a reduction of visual acuity (clarity or sharpness of vision).



Once again, position the stimulus approximately 12 - 15 inches (30 - 38 cm) in front of subject's nose and slightly above eye level.

The angle of onset of nystagmus is simply the point at which the eye is first seen jerking. Examples: With someone at a very high BAC (0.20+), the jerking might begin almost immediately after the eye starts to gaze toward the side. For someone at 0.08 BAC, the jerking might not start until the eye has moved nearly to the 45-degree angle. Generally speaking, the higher the BAC, the sooner the jerking will start as the eye moves toward the side. If the jerking begins prior to 45 degrees, that person's BAC could be 0.08 or above.

A subject with an angle of onset of nystagmus prior to 45 degrees, as a result of alcohol or drug impairment, also experiences a reduction of visual acuity (clarity or sharpness of vision).

Session 8 – Concepts and Principles of the SFSTs

Clue Number 3

Onset of Nystagmus Prior to 45 Degrees



DWI DETECTION & SFST 8-43

Slide 43.

It is not difficult to determine when the eye has reached the 45-degree point, but it does require some practice.

If you start with the stimulus approximately 12 - 15 inches (30 - 38 cm) directly in front of the nose, you will reach 45 degrees when you have moved the stimulus an equal distance to the side. At 45 degrees, some white usually will still be visible in the corner of the eye (for most people). Some people's eyes may not exhibit white in the corner at 45 degrees.

Session 8 – Concepts and Principles of the SFSTs

Mechanics of Clue Number 3



DWI DETECTION & SFST 8-44

Slide 44.

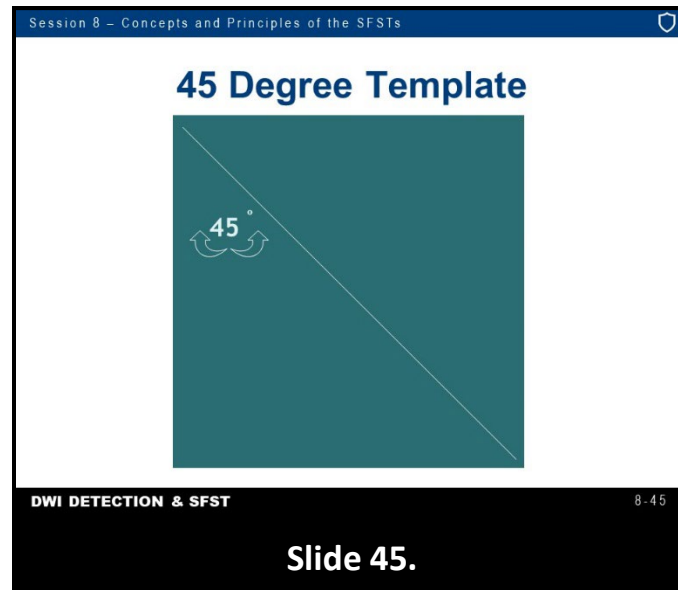
The stimulus is positioned approximately 12 - 15 inches from (30 - 38 cm) subject's nose and slightly above eye level. It is necessary to move the stimulus slowly to identify the point at which the eye begins to jerk.

Start again with the subject's left eye. The stimulus should be moved at a speed that takes approximately 4 seconds or more to travel from center to approximately 45 degrees. Moving the stimulus at a slower speed aids the officer in observing when the eye first begins to jerk.

As you are slowly moving the stimulus, watch the eye carefully for any sign of jerking.

When you see the eye jerk, stop moving the stimulus, hold it at that position, and verify the jerking continues. If the jerking is not evident with the stimulus held steady, you have not located the point of onset. Therefore, resume moving the stimulus slowly toward the side until you notice the jerking again.

When you locate the point of onset of nystagmus, stop moving the stimulus and determine whether it is prior to approximately 45 degrees.



A training aid has been provided to help you practice estimating a 45-degree angle and is located in the Participant Manual.

The outline of a square, with its diagonal line, gives us a 45-degree angle. This outline, or template, is provided for practice only. **It is not to be used with actual DWI subjects.**

To use the template, have your training partner hold the corner of the square under the nose.

When you line up your stimulus with the diagonal line, your partner will be looking along a 45-degree angle.

Session 8 – Concepts and Principles of the SFSTs

Horizontal Gaze Nystagmus Test Criterion

4 or more clues indicates
BAC above 0.08 (88% accurate)



DWI DETECTION & SFST 8-46

Slide 46.

Based upon the original developmental research into HGN, the criterion for this test is 4. If a person exhibits at least 4 out of the possible 6 clues, the implication is a BAC above 0.08. Using this criterion, the test is 88% accurate.



Administrative Procedures

1. Check for eyeglasses
2. Verbal instructions
3. Position stimulus (12-15 inches and slightly above eye level)
4. Check for Equal Pupil Size and Resting Nystagmus
5. Check for Equal Tracking

Slide 47.

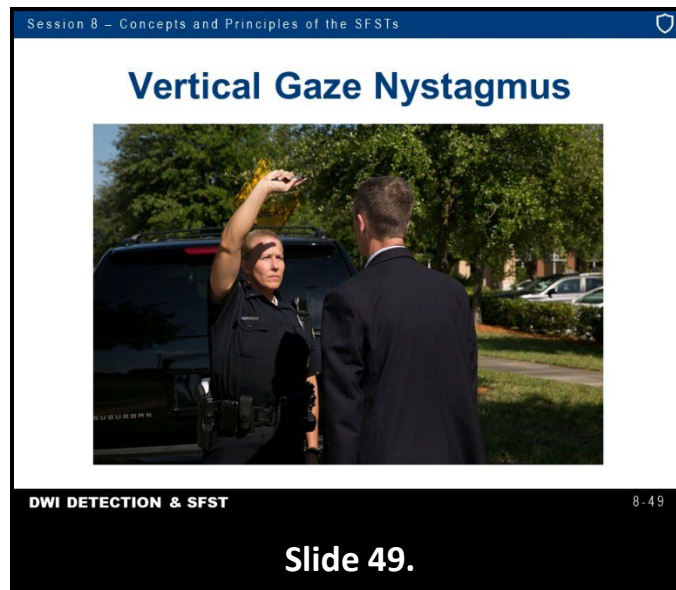


Administrative Procedures

6. Lack of Smooth Pursuit
7. Distinct and Sustained Nystagmus as Maximum Deviation
8. Onset of Nystagmus Prior to 45 Degrees
9. Total the clues
10. Check for Vertical Nystagmus

Slide 48.

E. Vertical Gaze Nystagmus (VGN)



The VGN test is simple to administer. Look for jerking when the eyes are held at maximum elevation for a minimum of four seconds.

- Position the stimulus horizontally, approximately 12 - 15 inches in front of the subject's nose
- Instruct the subject to hold the head still and follow the object with the eyes only
- Raise the object until the subject's eyes are elevated as far as possible
- Hold for a minimum of four seconds
- Watch closely for evidence of the eyes jerking upward
- Conduct this check at least twice

For VGN to be recorded, it must be distinct and sustained for a minimum of four seconds at maximum elevation. VGN may be present in subjects under the influence of high doses of alcohol for that individual, and some other drugs.

F. E. Walk and Turn

Session 8 – Concepts and Principles of the SFSTs

Walk and Turn

Divided Attention Test
Mental Task and Physical Task

- Instruction stage
- Walking stage



DWI DETECTION & SFST 8-50

Slide 50.

Test Stages: Like all divided attention tests, WAT has two stages. They are: Instruction stage and Walking stage. Both stages are important because they can affect the subject's overall performance on the test.

Test Conditions: Whenever possible, the WAT test should be conducted on a reasonably dry, hard, level, non-slippery surface. There should be sufficient room for subjects to complete nine heel-to-toe steps. Field validation studies have indicated varying environmental conditions have not affected a subject's ability to perform this test. Standardizing this test for every type of road condition is unrealistic. The original research study recommended this test be performed on a dry, hard, level, non-slippery surface and relatively safe conditions. If not, the research recommends: 1) subject be asked to perform the test elsewhere, or 2) only HGN be administered.

The original SCRI studies suggested individuals over 65 years of age or people with back, leg, or inner ear problems had difficulty performing this test. Less than 1.5% of the test subjects in the original studies were over 65 years of age. Also, the SCRI studies suggest individuals wearing heels more than 2 inches high should be given the opportunity to remove their shoes. Officers should consider all factors when conducting SFSTs.

Session 8 – Concepts and Principles of the SFSTs

Safety Precautions



DWI DETECTION & SFST 8-51

Slide 51.

Officers should be mindful of safety precautions when providing instructions for the WAT. By demonstrating the test perpendicular to the subject's "line" and initiating the demonstration with the subject to the left of the officer, the officer will properly demonstrate the turn WITHOUT turning his/her back to the subject. Officers should always be aware of their surroundings and environment when conducting DWI roadside investigations.

Session 8 – Concepts and Principles of the SFSTs

Administrative Procedures Instruction Stage

Verbal Instructions

- Assume heel-to-toe stance
- Arms down at sides
- Don't start until told

DWI DETECTION & SFST 8-52

Slide 52.

For standardization in the performance of this test, have the subject 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).
- Place your right foot on the line ahead of the left foot, with the heel of your right foot against the toe of the left foot.

- Place your arms down at your sides.
 - 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 subject indicates understanding.)
-

Session 8 – Concepts and Principles of the SFSTs

Administrative Procedures Walking Stage

- Nine heel-to-toe steps, turn, nine heel-to-toe steps
- Turn procedures:
 - Turn around on the line
 - Several small steps

DWI DETECTION & SFST8-53

Slide 53.

Explain the test requirements by giving the following instructions, accompanied by demonstrations:

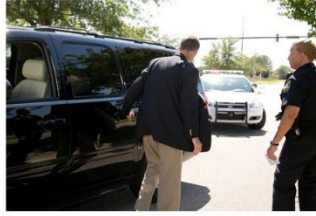
- When I tell you to start, take nine heel-to-toe steps on the line, turn, and take nine heel-to-toe steps down the line.
- When you turn, keep the front (lead) foot on the line, and turn by taking a series of small steps with the other foot, like this.
- While you are walking, keep your arms at your 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 subject understands.)
- Instruct the person to begin the test.

If the subject does not count out loud or watch his/her feet, remind him/her to perform these tasks. This interruption will not affect the validity of the test and is essential for evaluating divided attention.



Instruction Stage Clues

- Cannot keep balance while listening to instructions
- Starts too soon



DWI DETECTION & SFST

8-54

Slide 54.

Test Interpretation: You may observe a number of different behaviors when a subject performs this test. Original research demonstrated the behaviors listed below are likely to be observed in someone with a BAC at or above 0.08. Look for the following clues each time this test is given:

Cannot keep balance while listening to the instructions. Two tasks are required at the beginning of this test. The subject 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 subject may listen to the instructions, but not keep balance. Record this clue if the subject does not maintain the heel-to-toe position throughout the instructions. (Feet must actually break apart or step off the line.) Do not record this clue if the subject sways or uses the arms to balance but maintains the heel-to-toe position.

Starts too soon. The impaired person may also keep balance, but not listen to the instructions. Since you specifically instructed the subject not to start walking "until I tell you to begin," record this clue if the subject does not wait.

Session 8 – Concepts and Principles of the SFSTs

Walking Stage Clues

- Stops while walking
- Does not touch heel-to-toe
- Steps off the line
- Uses arm(s) to balance
- Improper turn
- Incorrect number of steps



DWI DETECTION & SFST 8-55

Slide 55.

Stops while walking. The subject stops while walking. Do not record this clue if the subject is merely walking slowly.

Does not touch heel-to-toe. The subject leaves a space of one-half inch or more between the heel and toe on any step.

Steps off the line. The subject steps so that one foot is entirely off the line.

Uses arm(s) to balance. The subject raises one or both arms six or more inches from the sides in order to maintain balance.

Improper turn. The subject removes the front foot from the line while turning. Also record this clue if the subject has not followed directions as instructed, i.e., spins or pivots around or loses balance while turning.

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

Session 8 – Concepts and Principles of the SFSTs

Walk and Turn Test Clues Summary

SFSTs are a tool to assist you in seeing visible signs of impairment and are not a pass/fail test.

DWI DETECTION & SFST 8-56

Slide 56.

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

Remember the SFSTs are a tool to assist you in seeing visible signs of impairment and are not a pass/fail test.

Subject gets into a "leg lock" position (legs crossed, unable to move.) If the subject 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 subject from a safe distance and limit your movement which may distract the subject during the test. **Always consider officer safety.**

Session 8 – Concepts and Principles of the SFSTs

Walk and Turn Test Criterion

2 or more clues indicates BAC
at or above 0.08 (79% accurate)



DWI DETECTION & SFST 8-57

Slide 57.

Based on research, if the subject exhibits two or more clues on this test or cannot complete it, classify the subject's BAC as at or above 0.08. Using this criterion, you will be able to accurately classify 79% of your subjects.

Source:

Stuster, J., & Burns, M. (1998, August). *Validation of the Standardized Field Sobriety Test Battery at BACs Below 0.10 Percent*. Santa Barbara, CA: Anacapa Sciences, Inc.

Review of Divided Attention Definition: WAT is a field sobriety test based on the important concept of divided attention.

The test requires the subject to divide attention among mental tasks and physical tasks. The mental tasks include comprehension of verbal instructions, processing of information, and recall of memory. The physical tasks include balance and coordination. The subject is required to maintain balance and coordination while standing still, walking, and turning.

Session 8 – Concepts and Principles of the SFSTs

Walk and Turn Test Demonstration



DWI DETECTION & SFST 8-58

Slide 58.

F. One Leg Stand

Session 8 – Concepts and Principles of the SFSTs

One Leg Stand

Divided Attention Test
Mental Task and Physical Task



- Instruction stage
- Balance and counting stage

DWI DETECTION & SFST 8-59

Slide 59.

Like all divided attention tests, OLS has two stages. They are: Instruction stage and Balance and Counting stage. Both stages are important because they can affect the subject's overall performance on the test.

Test Conditions: Whenever possible, the OLS test should be conducted on a reasonably dry, hard, level, and non-slippery surface. Subject's safety should be considered at all times. Standardizing this test for every type of road condition is unrealistic. The original research study recommended this test be performed on a dry, hard, level, non-slippery surface and relatively safe conditions. If not, the research recommends: 1) subject be asked to perform the test elsewhere; or 2) only HGN be administered. However, field validation studies have indicated that varying environmental conditions have not affected a subject's ability to perform this test.

The original SCRI studies suggested individuals over 65 years of age, people with back, leg or inner ear problems, or people who are overweight by 50 or more pounds may have difficulty performing this test. Less than 1.5% of the test subjects in the original studies were over 65 years of age.

There was no data containing the weight of the test subjects included in the final report. Also, the SCRI studies suggest individuals wearing heels more than 2 inches high should be given the opportunity to remove their shoes.

Session 8 – Concepts and Principles of the SFSTs

Administrative Procedures Instruction Stage

- Stand straight, feet together
- Keep arms at sides
- Maintain position until told otherwise



DWI DETECTION & SFST 8-60

Slide 60.

Initiate the test by giving the following instructions, accompanied by demonstrations.

- Please stand with your feet together and your arms down at the sides, like this.
 - Do not start to perform the test until I tell you to do so.
 - Do you understand the instructions so far?
-

Session 8 – Concepts and Principles of the SFSTs

Administrative Procedures Balance and Counting Stage



DWI DETECTION & SFST 8-61

Slide 61.

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

- When I tell you to start, raise either leg with the foot approximately six inches off the ground, keeping your foot parallel to the ground.
- Keep both legs straight and your arms at your side.
- While holding that position, count out loud in the following manner: “one thousand one, one thousand two, one thousand three,” and so on until told to stop.
- Keep your arms at your sides at all times and keep watching the raised foot.
- Do you understand?
- Go ahead and perform the test. (Officer should always time the 30 seconds. Test should be discontinued after 30 seconds.)

Observe the subject from a safe distance. Although not part of the administrative procedures, if the subject 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.

Session 8 – Concepts and Principles of the SFSTs

One Leg Stand Test Clues

- Sways while balancing
- Uses arm(s) to balance

DWI DETECTION & SFST 8-62

Slide 62.

You may observe a number of different behaviors when a subject performs this test. The original research found the behaviors listed below are the most likely to be observed in someone with a BAC at or above 0.08. When administering the OLS test, we look for certain specific behaviors. Each behavior or action is considered one clue. There is a maximum number of 4 clues on this test. Look for the following clues each time the OLS test is administered.

The subject sways while balancing – This refers to side to side or back and forth motion of the body, or a swaying motion of the foot, while the subject maintains the OLS position.

Slight tremors of the foot or body should not be interpreted as swaying.

Uses arm(s) to balance – Subject moves one or both arm(s) 6 or more inches from the side of the body in order to keep balance.

Session 8 – Concepts and Principles of the SFSTs

One Leg Stand Test Clues

- Hopping
- Puts foot down

DWI DETECTION & SFST 8-63

Slide 63.

Hopping – Subject is able to keep one foot off the ground, but resorts to hopping in order to maintain balance.

Puts foot down – The subject is not able to maintain the OLS position, putting the foot down one or more times during the 30 second count.

If the subject puts the foot down, give instructions to pick the foot up again and continue counting from the point at which the foot touched.

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

Remember time is critical in this test. The original SCRI 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.

Session 8 – Concepts and Principles of the SFSTs

One Leg Stand Test Criterion

2 or more clues indicates BAC
at or above 0.08 (83% accurate)



DWI DETECTION & SFST 8-64

Slide 64.

Based on research, if an individual shows two or more clues or cannot complete the OLS, there is a good chance the BAC is at or above 0.08. Using that criterion, you will accurately classify 83% of the people you test as to whether their BAC's are at or above 0.08.

Source:

Stuster, J., & Burns, M. (1998, August). *Validation of the Standardized Field Sobriety Test Battery at BACs Below 0.10 Percent*. Santa Barbara, CA: Anacapa Sciences, Inc.

Observe the subject from a safe distance and minimize movement during the test so as not to interfere. If the subject 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. Terminate the test after 30 seconds.

Review of Divided Attention Definition: OLS is another field sobriety test that employs divided attention. The subject's attention is divided among such simple tasks as balancing, listening, and counting out loud. Although none of these is particularly difficult in itself, the combination can be very difficult for someone who is impaired.

G. Taking Field Notes on the Standardized Field Sobriety Tests

Session 8 – Concepts and Principles of the SFSTs

Taking Field Notes on the SFSTs



DWI DETECTION & SFST 8-65

Slide 65.

For purposes of the arrest report and courtroom testimony, it is not enough to report the number of clues on the three tests. The numbers are important to the police officer in the field because they help 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 subject performed on the tests and what the subject did. The standard note taking guide is designed to help develop a clear description of the subject's performance on the tests.

Session 8 – Concepts and Principles of the SFSTs

Medical Assessment

Equal Pupils	☐ Yes	☐ No
Equal Tracking	☐ Yes	☐ No
Resting Nystagmus	☐ Yes	☐ No
Other _____		

DWI DETECTION & SFST 8-66

Slide 66.

The initial checks of the subject's eyes include several particularly important steps, which include: Equal Pupil Size, Equal Tracking, and Resting Nystagmus. Enter those results here.

Equal Pupils ☐ Yes ☐ No
Equal Tracking ☐ Yes ☐ No
Resting Nystagmus ☐ Yes ☐ No
Other _____

In the section labeled "other", record any facts, circumstances, conditions or observations that may be relevant to this procedure. Examples of additional evidence of impairment emerging while checking for nystagmus: Subject unable to keep head still; Subject swaying noticeably; Subject utters incriminating statements.

Session 8 – Concepts and Principles of the SFSTs

Horizontal Gaze Nystagmus

LEFT	RIGHT

- Lack of a smooth pursuit
- Distinct and sustained Nystagmus at max dev
- Onset of Nystagmus prior to 45 degrees

DWI DETECTION & SFST

8-67

Slide 67.

Complete the entire procedure for both eyes, checking "yes" or "no" for each clue. Check box (✓) if the clue is present. For standardization, test the subject's left eye first. Then, check for the same clue in the right eye. If clue is not present, leave box blank. After both eyes have been completely checked, total the number of HGN clues observed. Examples of conditions that may interfere with subject's performance while checking for nystagmus: Wind, dust, etc. (irritating subject's eyes). NOTE: Try to face subject away from flashing or strobe lights that could cause visual or other distractions that could impede the test.

Session 8 – Concepts and Principles of the SFSTs

Walk and Turn

WALK AND TURN

INSTRUCTION STAGE

CANNOT KEEP BALANCE

STARTS TOO SOON

WALKING STAGE

STOPS WALKING

MISSES HEEL-TO-TOE

STEPS OFF LINE

USES ARM(S) TO BALANCE

ACTUAL STEPS TAKEN

IMPROPER TURN (Describe) _____

CANNOT COMPLETE TEST (EXPLAIN) _____

OTHER: _____

DWI DETECTION & SFST 8-68

Slide 68.

The section on the WAT test appears at the top of the guide's back side. First two clues are checked only during the instruction stage. In the boxes provided, either record the number or enter a check (✓) or a number to indicate the number of times the clue appears during the instruction stage. Example: if subject loses balance twice during the instruction stage, place two check marks (✓) or a "2" in the box.

Example: If the subject does not start too soon, write "N/A" in that box.

Record the next four clues separately for each nine steps. If subject stops walking, record it by drawing a vertical line from the toe at the step at which the stop occurred and place a letter "S" at bottom of vertical line to indicate "stops walking". Do this for each of the nine steps. How many times during first nine steps? How many times during second nine steps?

If subject fails to touch heel-to-toe, record how many times this happens and place a letter "M" at bottom of vertical line to indicate missed heel-to-toe.

If subject steps off the line while walking, record it by drawing a line from the appropriate footprint at the angle in the direction in which the foot stepped. Do this for each nine steps. If subject uses arm(s) to balance, give some indication of how often or how long this happens. Example: subject raised arms from sides three times. Place three check marks (✓) or a "3" in the box.

Record the actual number of steps taken by subject, in each direction. If the subject takes additional steps, draw in the additional steps to reflect the actual number of steps taken. If the subject takes less than nine steps, place an (x) in the missing steps.

For the next clue, "Improper Turn," record a description of the turn.

- Example: turned incorrectly
- Example: stumbled, to left
- Example: wrong direction
- Example: no small steps

- If the turn is correct, note: N/A

If the subject is unable to safely complete the test, you may stop the test early. Document the reasons the test was stopped.

Officers are not limited to only documenting the above evidence during the test. Officers are encouraged to record sufficient evidence to deliver effective testimony in court.

At end of the test, examine each factor and determine the total number of clues recorded.

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 emerging during WAT test.

Examples of conditions that may interfere with subject's performance of the WAT test are wind/weather conditions, subject's age, and subject's footwear.

Session 8 – Concepts and Principles of the SFSTs
🛡️

One Leg Stand Field Notes

ONE LEG STAND

L	R

Sways while balancing

Uses arm(s) to balance

Hopping

Puts foot down

Type of Footwear

OTHER: _____

DWI DETECTION & SFST
8-69

Slide 69.

Record the subject's performance separately. For each clue, record how often it appears with a check mark (✓).

If subject sways, indicate how often with a (✓) check mark.

Indicate above the feet the number they were counting when they put their foot down.

Place check marks (✓) or a number in or near the small boxes to indicate how many times you observed each of the clues. In addition, if the subject puts the foot down during the test, record when it happened. To do this, write the count number at which the foot came down.

For example, suppose, when standing on the left leg, the subject lowered the right foot at a count of "one thousand thirteen," and again at "one thousand twenty."

If subject uses arm(s) to balance, indicate how often arms were raised.

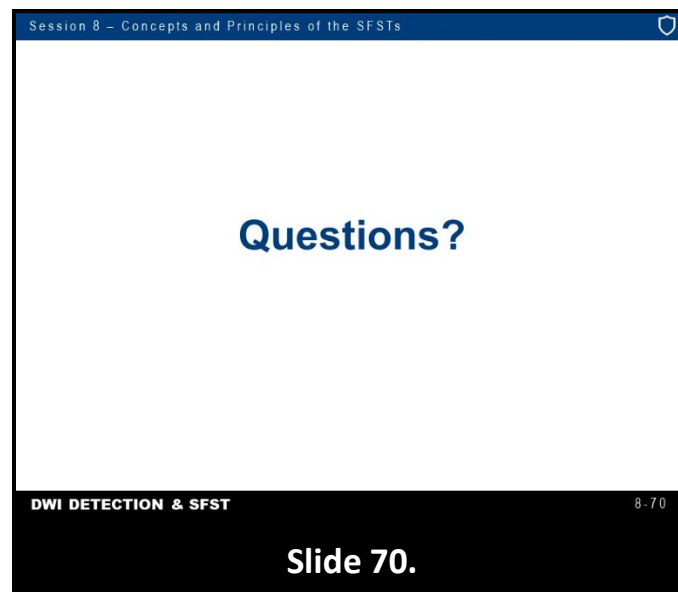
If subject is hopping, indicate how many hops were taken.

If subject puts foot down, indicate how many times the foot came down.

In the section labeled "Type of Footwear", record the type of footwear worn.

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 emerging during OLS test: Subject verbally miscounts 30 seconds; Subject utters incriminating statements.

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. Officers who are video recording the SFSTs may choose to document any observed clues by voicing them into the recording as the clues are observed. If the subject is unable to safely complete the test, you may stop the test early. Document the reason(s) the test was stopped.



Session 8 – Concepts and Principles of the SFSTs

Test Your Knowledge

1. WAT is an example of a _____-attention field sobriety test.
2. The WAT requires a real or imaginary line, and a reasonably _____, non-slippery surface.
3. During the _____ stage of the WAT, the subject is required to count their steps out loud.

DWI DETECTION & SFST 8-71

Slide 71.

Test Your Knowledge

1. WAT is an example of _____ - attention field sobriety test.
2. The WAT requires a real or imaginary line, and a reasonably _____, non-slippery surface.
3. During the _____ stage of the WAT, the subject is required to count their steps out loud.

Session 8 – Concepts and Principles of the SFSTs

Test Your Knowledge

4. Based upon the San Diego study, the WAT test can determine whether a subject's BAC is above or below 0.08, _____ % of the time
5. In the WAT test, a subject who steps off the line during the first 9 steps and once again during the second 9 steps and who uses arm(s) to balance twice during the second 9 steps has produced _____ distinct clue(s).

DWI DETECTION & SFST 8-72

Slide 72.

4. Based upon the San Diego study, the WAT test can determine whether a subject's BAC is above or below 0.08, _____ % of the time.
5. In the WAT test, a subject who steps off the line during the first 9 steps and once again during the second 9 steps and who uses arm(s) to balance twice during the second nine steps has produced _____ distinct clue(s).

Session 8 – Concepts and Principles of the SFSTs

Test Your Knowledge

6. The WAT test has _____ possible clues.
7. During the _____ stage of the OLS test the subject must maintain balance while standing on one foot
8. The OLS test requires the subject keep the foot raised for _____ seconds.

DWI DETECTION & SFST 8-73

Slide 73.

6. The WAT test has _____ possible clues.
 7. During the _____ stage of the OLS test the subject must maintain balance for 30 seconds.
 8. The OLS requires the subject keep the foot elevated for _____ seconds.
-

Session 8 – Concepts and Principles of the SFSTs

Test Your Knowledge

9. Based upon the San Diego study, the OLS test can determine whether a subject's BAC is above or below 0.08, _____ % of the time
10. In the OLS test, a subject who sways has produced _____ clue(s)
11. In the OLS test, a subject who uses arm(s) to balance, is hopping, and puts foot down has produced _____ clue(s).

DWI DETECTION & SFST 8-74

Slide 74.

9. Based upon the San Diego study, the OLS test can determine whether a subject's BAC is above or below 0.08, _____ % of the time.
 10. In the OLS test, a subject who sways has produced _____ clue(s).
 11. In the OLS test, a subject who uses arm(s) to balance, is hopping, and puts foot down has produced _____ clue(s).
-



Test Your Knowledge

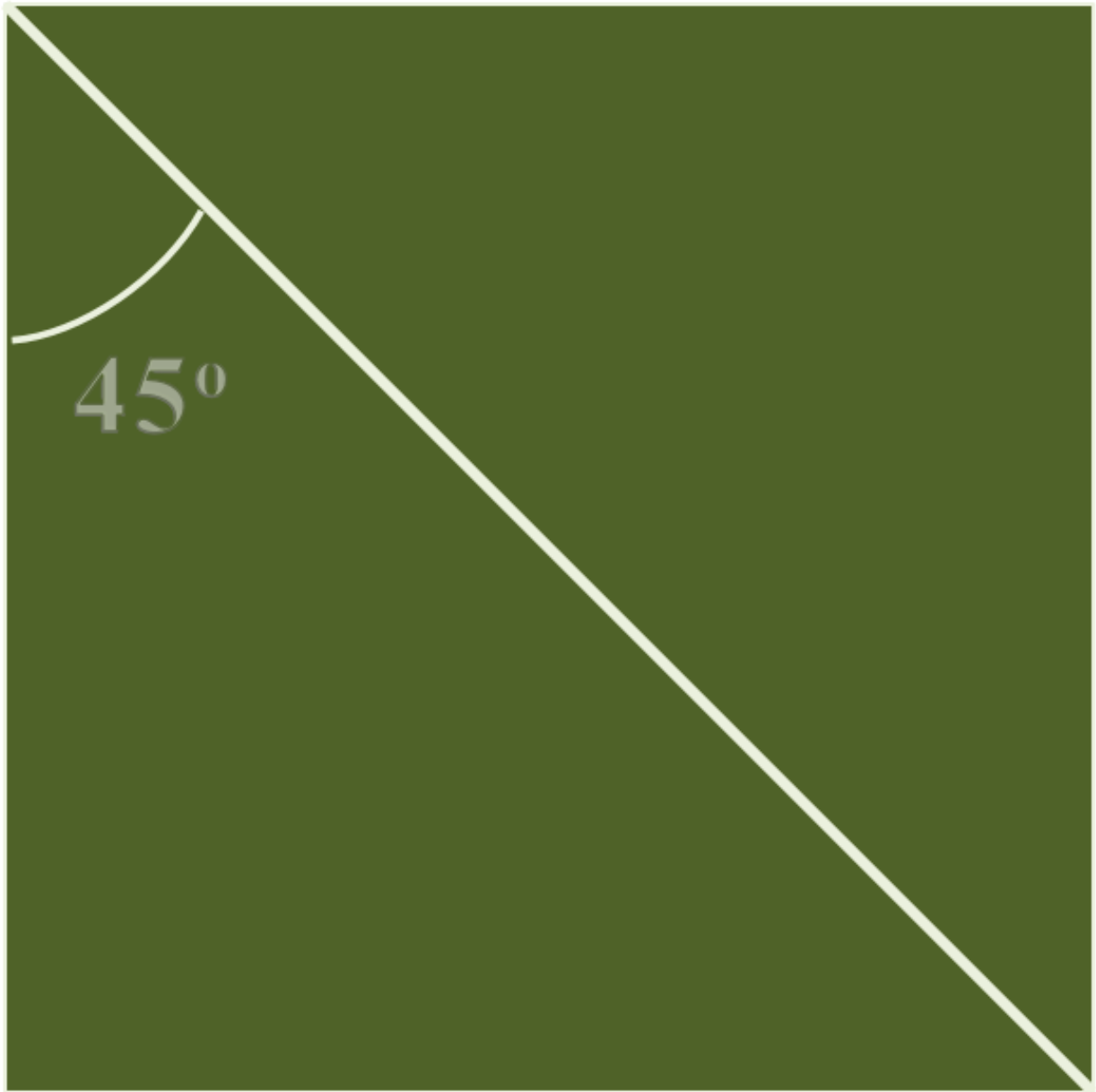
12. The maximum number of clues for HGN that can appear in one eye is _____.
13. Based upon the San Diego study, the HGN test can determine whether a subject's BAC is above 0.08, _____ % of the time.
14. The third clue of HGN is an Onset of Nystagmus Prior to _____ Degrees.

DWI DETECTION & SFST

8-75

Slide 75.

12. The maximum number of clues for HGN that can appear in one eye is _____.
13. Based upon the San Diego study, the HGN test can determine whether a subject's BAC is above 0.08, _____% of the time.
14. The third clue of HGN is an Onset of Nystagmus Prior to _____ Degrees.
-



9

SFST

SFST Demonstrations and Practice

LEARNING OBJECTIVE

- Demonstrate the appropriate administrative procedures for the Standardized Field Sobriety Tests (SFSTs)

CONTENTS

A. Live Classroom Demonstrations	2
B. Procedures and Group Assignments.....	3
C. Live Administration of SFSTs.....	3
D. Hands On Practice.....	3

LEARNING ACTIVITIES

- Instructor-Led Presentation
- Participant-Led Demonstration
- Participant Practice Session

Session 9 – SFST Demonstrations and Practice

Learning Objective

- Demonstrate appropriate administrative procedures for SFSTs



DWI DETECTION & SFST 9-2

Slide 2.

A. Live Classroom Demonstrations

Session 9 – SFST Demonstrations and Practice

Instructor-Led Presentation

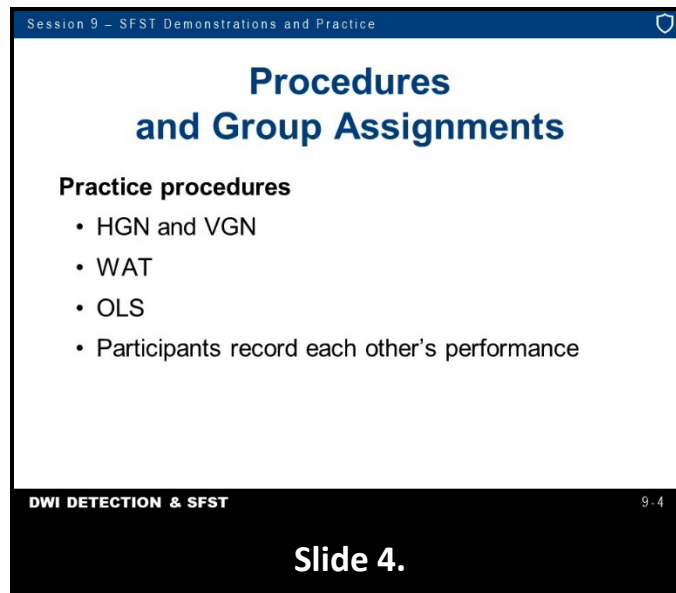
Three tests:

- HGN and VGN
- WAT
- OLS

DWI DETECTION & SFST 9-3

Slide 3.

B. Procedures and Group Assignments



Session 9 – SFST Demonstrations and Practice

Procedures and Group Assignments

Practice procedures

- HGN and VGN
- WAT
- OLS
- Participants record each other's performance

DWI DETECTION & SFST 9-4

Slide 4.

C. Live Administration of SFSTs

D. Hands On Practice



Questions?

Slide 5.

**PARTICIPANT PROFICIENCY EXAMINATION
STANDARDIZED FIELD SOBRIETY TESTs**

Name _____ Date _____/_____/_____

Agency _____

I. HORIZONTAL GAZE NYSTAGMUS

1. _____ Have subject remove glasses if worn.
2. _____ Gives proper verbal instructions.
3. _____ Stimulus held in proper position (approximately 12"-15" from nose, just slightly above eye level).
4. _____ Check for equal pupil size and resting nystagmus.
5. _____ Check for equal tracking.
6. _____ Lack of Smooth Pursuit: 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)
7. _____ Distinct & Sustained Nystagmus at Maximum Deviation: Eye held at maximum deviation for a minimum of 4 seconds (no white showing).
Check left eye, then right eye. (Repeat)
8. _____ Onset of Nystagmus Prior to 45 Degrees: Eye moved slowly (approximately 4 seconds) from center to 45 angle.
Check left eye, then right eye. (Repeat)
9. _____ Total the clues.
10. _____ 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 walking 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 asks 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 one, one thousand two, one thousand three, and so on until told to stop, and gives demonstration.
7. _____ Asks subject if all instructions are understood.
8. _____ Checks actual time subject holds leg up. (Time for 30 seconds.).

Instructor: _____

Note: In order to pass the proficiency examination, the participant must explain and proficiently complete each of the steps listed.

10 SFST

Alcohol Workshop: First Session

LEARNING OBJECTIVES

- Properly administer the Standardized Field Sobriety Tests (SFSTs)
- Properly observe and record subject's performance utilizing the standard note-taking guide
- Properly interpret the subject's performance
- Properly use and maintain the SFST Log

CONTENTS

A. Procedures	2
B. Hands on Practice	2
C. Use and Maintenance of SFST Log	3
D. Session Wrap Up	4

LEARNING ACTIVITIES

- Instructor-Led Presentations
- Participant Practice Session
- Instructor-Led Presentation
- Instructor-Led Discussion

Session 10 – Alcohol Workshop: First Session

Learning Objectives

- Properly administer SFSTs
- Properly observe and record subject's performance utilizing standard note-taking guide
- Properly interpret subject's performance
- Properly use and maintain SFST Log



DWI DETECTION & SFST 10-2

Slide 2.

A. Procedures

Session 10 – Alcohol Workshop: First Session

Procedures

- Same teams as dry run
- Each team member administers one complete series of tests to at least one drinking volunteer
- Prepare descriptive written test record on each volunteer tested
- Other team members observe and record performance

DWI DETECTION & SFST 10-3

Slide 3.

B. Hands on Practice

C. Use and Maintenance of SFST Log

Session 10 – Alcohol Workshop: First Session

SFST Log

SFST Log

Date	Name	HGN	WAT	OLS	BAC +/- .08	Arrest/ Not Arrest	Measured BAC	Remarks

DWI DETECTION & SFST 10-4

Slide 4.

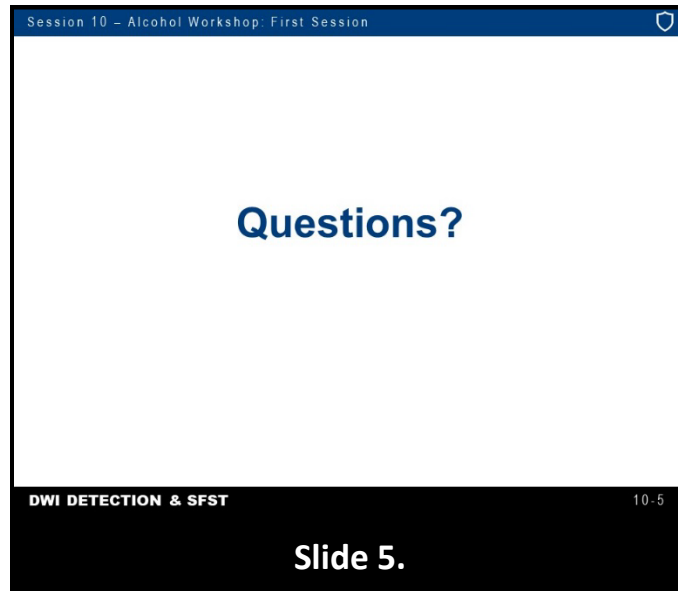
The SFST log is used to record the results of the SFSTs performed on suspected impaired subjects. The SFST log used in the course is located in the Participant Manual.

This log is important in documenting an officer's experience and proficiency in performing and interpreting SFSTs. It is highly recommended by the IACP and the National Highway Traffic Safety Administration (NHTSA), that officers utilize an SFST log to record training proficiency, records field proficiency, and documents the officer's experience. All of these combined helps to establish the officer's credibility in administering the SFSTs and may be used as evidence in court.

This log has the following components:

- The actual date the SFSTs were administered
- Subject's full name
- Results of each SFST test
- Classification of BAC as above or below 0.08 BAC
- Arrest/Not Arrest
- Subject's measured BAC (if available)
- Remarks

D. Session Wrap Up



SFST Log

Date	Name	HGN	WAT	OLS	BAC +/- .08	Arrest/ Not Arrest	Measured BAC	Remarks

SFST

Session 10-A

Dry Lab: First Session

LEARNING OBJECTIVES

- Properly administer the Standardized Field Sobriety Tests (SFSTs)
- Properly observe and record subject's performance utilizing the field note-taking guide
- Properly interpret the subject's performance
- Properly use and maintain the SFST Log

CONTENTS

A. Procedures	2
B. Hands On Practice.....	2
C. Use and Maintenance of SFST Log.....	3
D. Session Wrap Up.....	4

LEARNING ACTIVITIES

- Instructor-Led Presentations
- Participant Practice Session
- Instructor-Led Presentation
- Instructor-Led Discussion

Session 10-A – Dry Lab

Learning Objectives

- Properly administer SFSTs
- Properly observe and record subject's performance utilizing standard note-taking guide
- Properly interpret subject's performance
- Properly use and maintain SFST Log



DWI DETECTION & SFST 10A-2

Slide 2.

A. Procedures

Session 10-A – Dry Lab

Procedures

- Same teams as dry run
- Each subject will be viewed performing all three tasks
- Only one opportunity to view each subject
- Record number of clues observed in appropriate boxes on video recording worksheet

DWI DETECTION & SFST 10A-3

Slide 3.

B. Hands On Practice

C. Use and Maintenance of SFST Log

Session 10-A – Dry Lab

SFST Log

SFST Log

Date	Name	HGN	WAT	OLS	BAC +/- .08	Arrest/ Not Arrest	Measured BAC	Remarks

DWI DETECTION & SFST 10A-4

Slide 4.

The SFST Log is used to record the results of the SFSTs performed on suspected impaired subjects.

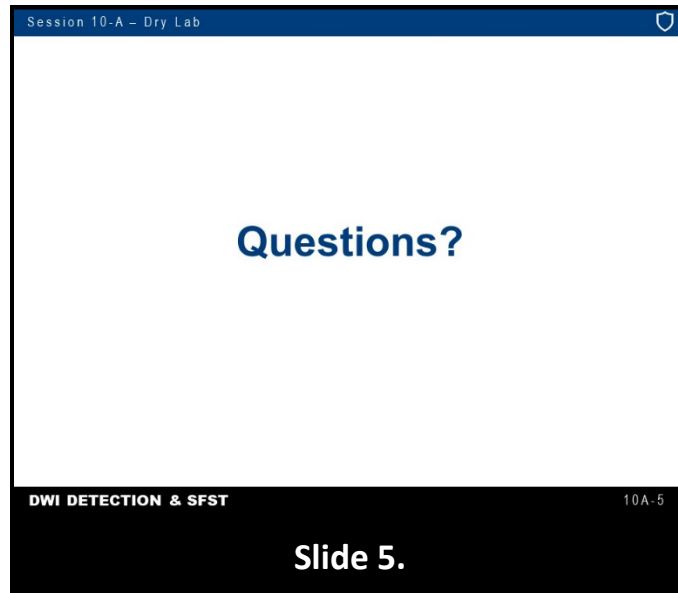
This log is important in documenting an officer's experience and proficiency in performing and interpreting SFSTs. It is highly recommended by the IACP and the National Highway Traffic Safety Administration (NHTSA), that officers utilize an SFST log for the following reasons:

- Records training proficiency
- Records field proficiency
- Documents the officer's experience

All of these combined helps to establish the officer's credibility in administering the SFSTs and may be used as evidence in court. This log has the following components:

- The actual date the SFSTs were administered
 - Subject's full name
 - Results of each SFST test
 - Classification of BAC as above or below 0.08 BAC
 - Arrest/Not Arrest
 - Subject's measured BAC (if available)
 - Remarks
-

D. Session Wrap Up



SFST Log

Date	Name	HGN	WAT	OLS	BAC +/- .08	Arrest/ Not Arrest	Measured BAC	Remarks

Video Recording Sheet

SUSPECT'S NAME: _____ OFFICER'S NAME: _____

Pupil Size: ☐ Equal ☐ Unequal	Tracking: ☐ Equal ☐ Unequal	Unequal Pupil Size: Explain:	
Resting Nystagmus ☐ Yes ☐ No	Eyelids: ☐ Normal ☐ Droopy		
Lack of Smooth Pursuit	Left Eye	Right Eye	Vertical Nystagmus ☐ Yes ☐ No
Distinct and Sustained Nystagmus at Maximum Deviation	Left Eye	Right Eye	Eyes: ☐ Normal ☐ Bloodshot ☐ Watery
Onset of Nystagmus Prior To 45 Degrees			

HGN CLUES

Observed	Actual

WALK AND TURN TEST Cannot keep balance _____ Starts too soon _____



Stops Walking
Misses Heel-to-Toe
Steps Off Line
Uses Arms
Actual Steps Taken

1st Nine 2nd
 Nine

1 st Nine	2 nd Nine

WALK AND TURN

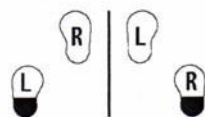
Observed	Actual

Improper Turn (Describe)	Cannot Do Test (Explain)
--------------------------	--------------------------

Team Information Team No: _____ Arrest Decision: Yes: _____ No: _____ BAC: Above 0.08: _____ Below 0.08: _____
--

ONE LEG STAND

L	R
☐	☐
☐	☐
☐	☐
☐	☐



Sways while balancing
Uses arms to balance
Hopping
Puts foot down

ONE LEG STAND

Observed	Actual

11

SFST

Processing the Arrested Subject, Report Writing, and Preparation for Trial

LEARNING OBJECTIVES

- Discuss the importance of correct processing and report writing procedures in DWI arrests
- Discuss the correct sequence of DWI processing procedures
- Discuss the essential elements of a DWI report
- Successfully complete a narrative arrest report
- Discuss the importance of trial preparation

CONTENTS

A. The Processing Phase.....	3
B. Narrative DWI Arrest Report	11
C. Case Preparation and Pretrial Conference	21
D. Guidelines for Direct Testimony	24

LEARNING ACTIVITIES

- Instructor-Led Presentations
- Video Presentation
- Instructor-Led Demonstrations
- Participant Presentations

Learning Objectives

- Discuss importance of correct processing and report writing procedures in DWI arrests
- Discuss correct sequence of DWI processing procedures



DWI DETECTION & SFST

11-2

Slide 2.

Learning Objectives

- Discuss the essential elements of a DWI report
- Successfully complete a narrative arrest report
- Discuss the importance of trial preparation



DWI DETECTION & SFST

11-3

Slide 3.

A. The Processing Phase

Session 11 – Processing the Arrested Subject, Report Writing, and Prep for Trial

Foundation for Successful Testimony

- Relationship between law enforcement officer(s) involved with arrest and prosecuting attorney(s)
- Effective communication and a clear understanding



DWI DETECTION & SFST 11-4

Slide 4.

The foundation for preparation and successful testimony is the relationship between the law enforcement officer(s) involved with the arrest and the prosecuting attorney(s) associated with the case. Effective communication and a clear understanding of each group's objectives and expectations is essential for successful prosecution.

You, as the State's primary witness, play an important part in illustrating to the judge/jury the impairment of the defendant. In addition to verbal testimony, visual aids are often helpful in painting the picture of the entire DWI detection process. Visual aids engage the judge/jury and increase the retention of information. In addition, it is important you do not use legal, law enforcement, or medical terms unless absolutely necessary. The use of plain English assists the judge, jury, and others involved in the case to understand the specifics of all the testimony.

Testimony



- Be prepared to speak to evidence
- Take time
- Listen
- Organize response before answering questions

DWI DETECTION & SFST

11-5

Slide 5.

Since testimony constitutes the majority of time spent in trial, it is imperative, in addition to effective communication techniques, the witness be well prepared to speak to the evidence related to the case. Direct examination is your opportunity to tell the story. It should be an exchange between the prosecutor and the law enforcement officer.

Take the time to think and make sure you completely understand the question and organize your response before you answer. NEVER answer a question you do not fully understand. Cross examination is NOT the time to showboat. Always listen carefully to the question and again make sure you completely understand the question before you answer. If you do not understand the question, ask for clarification. If you are not able to fully understand the question during direct or cross examination, it is acceptable to say, “I do not know,” “I cannot answer that question,” or “I cannot answer that question without further explanation.” Always make sure you listen closely to the question and don’t answer a question you don’t understand. **Remember: When it comes to successful testimony, there is NO substitution for preparation.**

Successful Prosecution

- Organize and present relevant evidence
- All evidence must be compiled during three phases of detection



DWI DETECTION & SFST

11-6

Slide 6.

The successful prosecution of a DWI case often depends upon the officer's ability to organize and present all relevant evidence of each element of the DWI violation. Keep in mind 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 the violation occurred; therefore, observations are critical. Subsequent evidence of impairment, such as 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 offender will be of little value if there is not sufficient evidence to prove every element of the violation.

No matter how much evidence you collect, if it is not presented clearly, completely, and convincingly in court, the case may be lost. Therefore, it is essential officers develop the ability to write a clear, complete, and concise report describing their observations and results. Additionally, the officer must be able to articulate that information to the judge/jury.



Types of Evidence

- Physical
- Established facts
- Illustrative
- Demonstrative
- Written documentation
- Testimony



DWI DETECTION & SFST

11-7

Slide 7.

Evidence of a DWI violation may be of various types. Physical (or real) evidence can be something tangible, visible, audible (e.g., a blood sample or a partially empty can of beer). Well established facts for example judicial notice of accuracy of the breath test device when proper procedures are followed. Illustrative evidence includes visual aids (e.g., photo of the crash scene, defendant, or diagram of the roadway). Demonstrative evidence are demonstrations performed in courtroom (e.g., Standardized Field Sobriety Tests (SFSTs) or other field sobriety tests). Written documentation can be the citation, the alcohol influence report, the drug evaluation report, evidential chemical test results, etc. Testimony which can be the officer's verbal description of what was seen, heard, smelled, etc.

Prosecutor



- Prove every element of offense
- Establish proper procedures were followed

DWI DETECTION & SFST

11-8

Slide 8.

The prosecutor must be able to establish and prove every element of the offense. The prosecutor also must establish the proper procedures were followed, including:

- There was a reasonable suspicion or another valid reason for stopping/contacting the driver.
 - The driver was operating or in actual physical control of the vehicle.
 - There was probable cause to arrest the driver.
-

Session 11 – Processing the Arrested Subject, Report Writing, and Prep for Trial

Proper Arrest Procedures

- Miranda warning
- Subsequent observations/interview of defendant
- Chemical test

DWI DETECTION & SFST 11-9

Slide 9.

- Proper regard was given to the defendant's Miranda rights
- Subsequent observations/interview of the defendant provided additional evidence relevant to the offense
- There was a proper request for a chemical test

The prosecutor's case will largely be based upon the thoroughness of the officer's investigation and the clarity of his/her testimony. While it is true many items which are critical to the prosecution are documented on special forms, the officer must keep in mind the prosecutor may not have the time to search out relevant facts. The decision may be made to amend, reduce, or even dismiss the case on the basis of the arrest report alone. It is essential the report clearly, completely, and accurately describe the total sequence of events from the point the driver was first observed, through the arrest, the chemical test, and subsequent release or incarceration.

Session 11 – Processing the Arrested Subject, Report Writing, and Prep for Trial

Guidelines for Note Taking

- Recognition and retention of facts
- Must establish each element of violation
- Recognize and recall facts and circumstances
- Rely on your own field notes

DWI DETECTION & SFST 11-10

Slide 10.

One of the critical tasks in the DWI enforcement process is the recognition and retention of facts that establish reasonable suspicion to stop the driver, investigate further, and the probable cause to arrest persons for DWI. The evidence gathered during the detection process must establish each element of the violation and must be documented to support successful prosecution of the defendant. This evidence is largely sensory (see, smell, hear) in nature and, therefore, is extremely short lived. Law enforcement 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, video, and digital recorders in the field. 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 vital evidence is documented. Field notes provide the information necessary for completion of required DWI report forms and assist the officer in preparing a written narrative of the investigation. Since they can be used to refresh the officer's memory, field notes could be useful if the officer is required to provide oral testimony.

Session 11 – Processing the Arrested Subject, Report Writing, and Prep for Trial

Processing Tasks



DWI DETECTION & SFST 11-11

Slide 11.

The Processing Phase of a DWI Enforcement incident is the bridge between arrest and conviction of a DWI offender. Processing involves the proper assembly and organization of all of the evidence obtained during the detection phase. This ensures the evidence will be available and admissible in court. Processing also involves obtaining additional evidence, such as a chemical test or tests of the subject's breath, blood, etc. Typically, the processing phase may involve the following tasks:

- Inform the driver they are under arrest
 - "Pat down" or frisk the defendant
 - Handcuff the defendant
 - Secure the defendant in the patrol vehicle
 - Secure the defendant's vehicle, passengers, property
 - Transport the defendant to an appropriate facility
 - Advise the defendant of rights and obligations under the implied consent law
 - Administer the evidentiary chemical test(s)
 - Advise the defendant of Constitutional Rights (Miranda Admonition)
 - Interview the defendant
 - Incarcerate or release the defendant
 - Complete the required reports
-

B. Narrative DWI Arrest Report

Session 11 – Processing the Arrested Subject, Report Writing, and Prep for Trial

Essentials of Prosecution's Case

- Reasonable suspicion for contact
- Probable cause for arrest
- Proper arrest procedures
- Post-arrest evidence
- Request for chemical test(s)/results
- Clear and concise report

DWI DETECTION & SFST11-12

Slide 12.

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 critical the report be detailed regarding every phase of the detection and arrest process. It is helpful to follow a simple format. Departmental policies and/or special instructions or requirements of the prosecutor provide some guidance.

It is important for officers to understand the essential ingredients of the prosecution's case. Clarity and completeness of an officer's observations and relaying this information in a clear and concise report is critical. Additionally, an officer must be able to establish he/she had reasonable grounds for the arrest and followed proper arrest procedures. Proper arrest procedures include advising the defendant of their constitutional rights and gathering additional post-arrest evidence. The admissibility of chemical test evidence requires a proper request in accordance with your State's guidelines.

Session 11 – Processing the Arrested Subject, Report Writing, and Prep for Trial

Detection and Arrest



- Mentally note relevant facts
- Field notes
- Follow departmental policies

DWI DETECTION & SFST 11-13

Slide 13.

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 can be used to refresh officer's memory when the formal arrest/narrative report is prepared.

Session 11 – Processing the Arrested Subject, Report Writing, and Prep for Trial

Writing the Report – Vehicle in Motion

- Initial Observations
- Driving or Actual Physical Control
- Vehicle Stop



DWI DETECTION & SFST 11-14

Slide 14.

The following block outline format identifies some of the important components in a DWI arrest/narrative report:

Initial Observations – Describe your first observations of the driver's actions. What drew your attention to the vehicle/driver? Your first observations are important because they help establish your reasonable suspicion to stop. This should include details about the driving before you initiated the traffic stop. Be sure to record the time and location of the first event.

Driving or Actual Physical Control – In some cases, you may not use the 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 the driver was operating or in actual physical control of the vehicle. You can use circumstantial evidence, such as seat belt marks, ownership of the vehicle, location of the keys, admissions, witness statements, etc. to establish this element.

Vehicle Stop – Record any unusual actions taken by the driver. How did the driver react to the emergency light and/or siren? How far did the driver travel after emergency equipment was activated? How did the driver pull over? Was it a normal stop? Be detailed and specific.

Session 11 – Processing the Arrested Subject, Report Writing, and Prep for Trial

Writing the Report – Personal Contact

- Contact With Driver
- Preliminary Questions
- Exit From Vehicle



DWI DETECTION & SFST11-15

Slide 15.

Contact with Driver – Record your observations of the driver's personal appearance, condition of the eyes, speech, odors, inappropriate or inconsistent responses to questions, etc. Record the name and condition of passengers in the vehicle and where they were located. Describe any unusual actions taken by the driver or passengers.

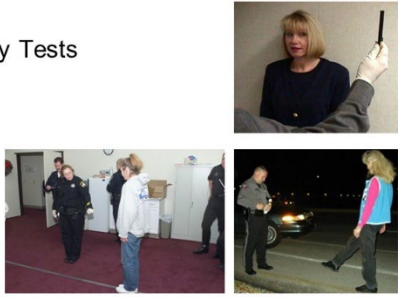
Preliminary Questions – Record the preliminary questions you ask of the driver as well as their responses. Pay close attention to any inconsistent responses and any other physical signs of impairment. For example: driver responds, “I’m just trying to get home” when asked “are you diabetic or epileptic?”

Exit from Vehicle – Record your observations of the driver's exit from the vehicle and include any unusual actions taken by the driver. Be specific about how the driver exits the vehicle. For example climbs out of the vehicle, uses the vehicle for support, leans on the vehicle, walks slowly and/or deliberately, stumbles, etc.

Session 11 – Processing the Arrested Subject, Report Writing, and Prep for Trial

Writing the Report – Pre-Arrest Screening

- SFSTs
- Other Field Sobriety Tests
- Arrest



DWI DETECTION & SFST 11-16

Slide 16.

SFSTs – This should include specific details about the validated clues noted during the test. It should also include all other observations made during the SFSTs such as: did not follow directions, how quickly or slowly the driver performed the test, etc. Include specific details about the clues observed. For example, missed heel-to-toe on steps 3, 4, and 5 by at least three inches each step, etc.

Other Field Sobriety Tests – Describe the driver's actions when you administered other field sobriety tests. Be specific.

Arrest – Document the arrest decision and ensure all elements of the crime have been accurately described.

Session 11 – Processing the Arrested Subject, Report Writing, and Prep for Trial

Writing the Report – Post Arrest

ON SCENE:

- Disposition of Passengers
- Disposition of Vehicle and Property
- Witness' Statements
- Transport of Defendant

DWI DETECTION & SFST 11-17

Slide 17.

ON SCENE:

Disposition of Passengers – Make sure passengers are identified, interviewed, and safely released.

Disposition of Vehicle and Property – 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. Document disposition of any property seized.

Witness' Statements – List all witnesses (including other officers), contact information, and attach copies of their statements (if any). Additionally, make notes of any verbal statements made by witnesses.

Transport of Defendant – Describe where the defendant was transported for evidential testing. Document time of departure and arrival. (This information can be obtained from the radio log). Note any spontaneous or voluntary comments made by the defendant.

Session 11 – Processing the Arrested Subject, Report Writing, and Prep for Trial

Writing the Report – Post Arrest

POST SCENE:

- Implied Consent/Search Warrant
- Miranda Warning
- Evidentiary Test(s)
- Notifications
- Citation/Complaint
- Book or Release



DWI DETECTION & SFST 11-18

Slide 18.

The foregoing list is not intended to be all inclusive. In many cases, several points may not be applicable and additional information not listed may apply.

POST SCENE:

Implied Consent/Search Warrant – Document the admonishments given at the appropriate point in the investigation.

Miranda Warning

Evidentiary Test(s) – Document which test(s) were administered and by whom. If the defendant is authorized to request additional chemical tests and does so, record the type of test, time administered, location, and party administering the test.

Notification of Defendant's Attorney or Other Party – Document the time and result of defendant's telephone call to an attorney or other party.

Citation/Complaint – Document the traffic citation/complaint was issued at the appropriate time, if applicable.

Book or Release – Document the time and place of incarceration or the name and address of the responsible party to whom the defendant was released. Be sure to record the time.

Session 11 – Processing the Arrested Subject, Report Writing, and Prep for Trial

Writing the Report

- Narrative must be detailed and accurate
- Successful prosecution depends on your ability to describe events observed



DWI DETECTION & SFST 11-19

Slide 19.

The narrative does not necessarily have to be lengthy, but it must be detailed and accurate. Remember, successful prosecution depends on your ability to describe the events you observed. Often a trial can be avoided (i.e., a defendant may plead guilty) when you do a thorough job in preparing your arrest report.

A sample report providing an example of the block outline format is at the end of the session.

Session 11 – Processing the Arrested Subject, Report Writing, and Prep for Trial

Nighttime DWI Arrest



DWI DETECTION & SFST 11-20

Slide 20.

Session 11 – Processing the Arrested Subject, Report Writing, and Prep for Trial

DWI Incident Report

- Defendant: Jarod Primo Age:31
- Date of Arrest: XX/XX/XX
- Time of Arrest: 9:20 PM
- Initial Observation:
 - Defendant driving white SUV
 - Driving without license plate
 - Drifted over the center line twice

DWI DETECTION & SFST 11-21

Slide 21.

Session 11 – Processing the Arrested Subject, Report Writing, and Prep for Trial

DWI Incident Report

- Initial Observation:
 - Weaving within lane
 - Four lane roadway, clear, breezy, traffic light
 - Slow response to stop command
 - Crossed over fog line
 - Failed to use turn signal
 - Failed to stop at stop sign

DWI DETECTION & SFST 11-22

Slide 22.

DWI Incident Report

Defendant: Jarod Primo, Age:31

Date of Arrest: 4-14-XX

Time of Arrest: 9:20 PM

Initial Observation:

- Defendant driving white SUV
- Driving without license plate
- Drifted over the center line twice
- Weaving within lane
- Slow response to stop command
- Failed to stop at stop sign
- Four lane roadway, clear, breezy, traffic light
- Slow response to stop command
- Crossed over fog line
- Failed to use turn signal

- Failed to stop at stop sign
-

Session 11 – Processing the Arrested Subject, Report Writing, and Prep for Trial

DWI Incident Report

- Contact with Driver
 - Driver was sole occupant
 - Produced credit card instead of DL
 - Forgot to produce registration/insurance
 - Odor of alcoholic beverage in vehicle
 - Admissions of drinking
 - Unsteady on exit from vehicle

DWI DETECTION & SFST 11-23

Slide 23.

Contact with Driver:

- Driver was sole occupant
 - Produced credit card instead of DL
 - Forgot to produce registration/insurance
 - Odor of alcoholic beverage in vehicle
 - Admissions of drinking (2 drinks)
 - Unsteady on exit from vehicle
 - Any other observations during contact with driver?
-

Session 11 – Processing the Arrested Subject, Report Writing, and Prep for Trial

SFSTs



DWI DETECTION & SFST 11-24

Slide 24.

SFSTs

- Horizontal Gaze Nystagmus (HGN) – Lack of Smooth Pursuit, Distinct and Sustained Nystagmus at Maximum Deviation, and Onset of Nystagmus Prior to 45 Degrees in both eyes
- Walk and Turn (WAT) – Could not maintain balance during instructions, improper turn, used arms for balance (2x), steps off line, and stops while walking
- One Leg Stand (OLS) – Raised right foot, put foot down on 1010 and 1014, raised left arm for balance, hopped, and reached the count of 1014 in 30 seconds

Any other observations?

Session 11 – Processing the Arrested Subject, Report Writing, and Prep for Trial

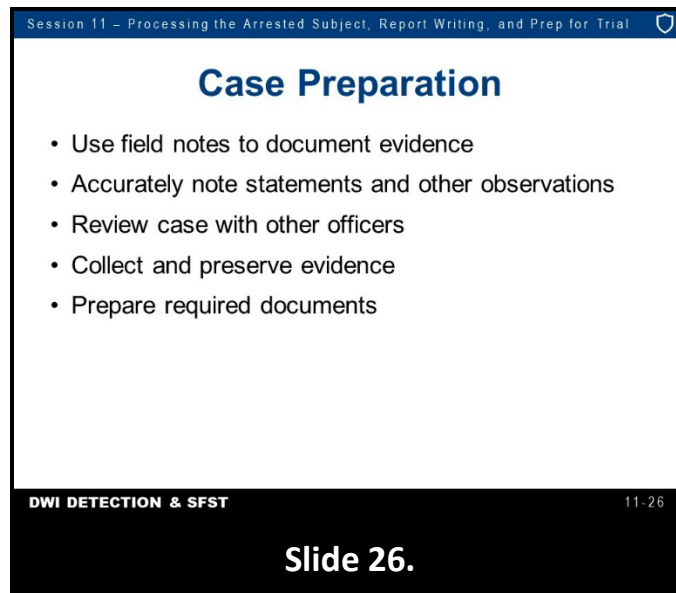
The Arrest

Based on observations of defendant's driving, physical appearance, and performance of SFSTs, she was placed under arrest for DWI.

DWI DETECTION & SFST 11-25

Slide 25.

C. Case Preparation and Pretrial Conference

A presentation slide titled "Case Preparation" with a list of five bullet points. The slide has a blue header bar with the text "Session 11 – Processing the Arrested Subject, Report Writing, and Prep for Trial" and a shield icon. The footer is black with white text.

Session 11 – Processing the Arrested Subject, Report Writing, and Prep for Trial

Case Preparation

- Use field notes to document evidence
- Accurately note statements and other observations
- Review case with other officers
- Collect and preserve evidence
- Prepare required documents

DWI DETECTION & SFST 11-26

Slide 26.

As was discussed in Session 4, case preparation begins with your first observation and contact with the driver. It is essential all relevant facts and evidence are mentally noted and later documented in field notes, narrative report, or other official forms.

Guidelines for Case Preparation: Use field notes to document evidence. Accurately note statements and other observations. Review 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.

Session 11 – Processing the Arrested Subject, Report Writing, and Prep for Trial

Report Consistency

- Adequately explain inconsistencies
- Review records and reports
- Properly document evidence

DWI DETECTION & SFST 11-27

Slide 27.

Remember, it is essential 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 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.

Session 11 – Processing the Arrested Subject, Report Writing, and Prep for Trial

Pretrial Conference



DWI DETECTION & SFST 11-28

Slide 28.

Session 11 – Processing the Arrested Subject, Report Writing, and Prep for Trial

Pretrial Conference

- Be prepared
- Discuss all evidence/conclusions
- Identify strengths and issues
- Review potential questions
- Identify defense challenges

DWI DETECTION & SFST 11-29

Slide 29.

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/or experts.

If at all possible, arrange a pretrial conference with the prosecutor. In preparation for the pretrial conference, you should review the entire case file. During the conference, discuss with the prosecutor all evidence and all bases for your conclusions. If there are strengths or issues in your case, bring them to the prosecutor's attention. Ask the prosecutor to review the questions that will be asked on the witness stand. Identify questions of which you do not have the answer to the prosecutor. Ask the prosecutor to review questions and challenges the defense attorney may use. Review your credentials and qualifications with the prosecutor. If you cannot have a pretrial conference, try to identify the main points and weaknesses about the case and be sure to discuss these with the prosecutor during the few minutes you will have just before the trial.

D. Guidelines for Direct Testimony

Session 11 – Processing the Arrested Subject, Report Writing, and Prep for Trial

Direct Testimony

- Describe in detail case facts, all observations, SFSTs clues/observations
- Be professional
- Use plain language
- Make eye contact with judge/jury
- Repeat important points



DWI DETECTION & SFST 11-30

Slide 30.

Your basic task is to establish the facts of the case: *The subject 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 reasonable suspicion for the stop, probable cause for the arrest, and conclusive evidence regarding every element of the offense.

Describe in a clear, detailed, and convincing manner all relevant observations during the three detection phases and those subsequent to the arrest. Describe clearly how the defendant performed (e.g., stepped off the line twice on steps 2 and 4, raised the arms on steps 5 and 7 going out and step 3 coming back, etc.). By presenting your observations clearly and convincingly, you will allow evidence of the defendant's impairment to speak for itself. Direct testimony should include all relevant information about this incident. Always keep in mind 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. Make eye contact with the judge/jury; they are the people you are trying to convince. Repeat important points and continued observations about the defendant.

Session 11 – Processing the Arrested Subject, Report Writing, and Prep for Trial

Cross Examination

- Be polite
- Don't become agitated
- If you don't know the answer
 - Don't guess
 - "I don't know"

DWI DETECTION & SFST 11-31

Slide 31.

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.

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.

Defense Challenges

- Your observations/interpretations
- Your credentials



DWI DETECTION & SFST

11-32

Slide 32.

The defense will ask questions to challenge your observations and interpretations. For example, you may be asked whether the signs, symptoms, and behaviors you observed of the defendant could have been caused by an injury or illness or by something other than the alcohol/drugs. You will be asked questions to create doubt about your observations. Answer these questions honestly, but carefully. If your observations are not consistent with an illness or injury, explain why not. Clearly testify your opinion is based on everything observed during the DWI investigation.

The defense will attempt to challenge your credentials by asking questions to cast doubt on your formal training. They will ask questions to "trip you up" on technical or scientific issues. Answer all questions about your training and experience completely and accurately, but don't embellish. Answer scientific or technical questions only if you have been trained in that area.

Session 11 – Processing the Arrested Subject, Report Writing, and Prep for Trial

Defense Challenges

- Your credibility
- SFSTs



DWI DETECTION & SFST 11-33

Slide 33.

The defense will ask questions to challenge your credibility. You may be asked several very similar questions in the hope your answers will be inconsistent. You may be asked questions designed to imply you had already formed your opinion before the defendant completed the SFSTs. Listen to the questions carefully and emphasize your arrest decision was made at the completion of your DWI investigation and based on ALL available evidence.

You may be asked questions that suggest you deviated from your training. These questions may suggest you eliminated portions of the tests or gave incomplete or confusing instructions. One way you can refute these defense challenges is by administering the SFSTs as you were trained. If deviations to the protocol occur, it is important to explain why. Standardization ensures both consistency and credibility.

Avoid using “I didn’t do XYZ” versus “I couldn’t do XYZ.” If you deviated from the standard, “didn’t” implies it was your choice. “Couldn’t” implies you had no choice (i.e., inclement weather, gross impairment of the defendant, the defendant was not cooperative, physical injury, geographical location, etc.).

You may be asked questions that suggest the SFSTs are not relevant. These questions will suggest SFSTs have no relationship to driving. For example, a defense attorney may suggest standing on one leg does not correlate with the ability to drive safely. The divided attention tests assess the same mental and physical capabilities a person needs to drive safely. These include information processing; short term memory; judgment and decision making; balance; steady, sure reactions; clear vision; small muscle control; and coordination of limbs.

Session 11 – Processing the Arrested Subject, Report Writing, and Prep for Trial

Questions?

DWI DETECTION & SFST 11-34

Slide 34.

Trial Tips and Techniques

Courtroom Decorum

1. **TELL THE TRUTH.** Honesty is the best policy. Telling the truth requires 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. Provide your professional Curriculum Vitae to the prosecutor and, if requested, bring it to court with you.
3. **READ YOUR INCIDENT REPORT** prior to arrival at court. Go over the details and refresh your memory of the events of the arrest. If you cannot locate a copy of your report, ask the prosecutor prior to the court date.
4. Dress neatly and professionally; leave sunglasses, gloves, flashlight and other cumbersome equipment in your car before coming into the courtroom, unless needed for a demonstration.
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 not 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 attorney has finished asking the question. Be sure you understand the question before you attempt to give an answer. It is appropriate if you don’t understand the question to say, “I don’t understand your question.” If necessary, ask that the question be repeated or rephrased.
7. Take your time. Do not feel pressured to give a quick answer. Take time after the question is asked to think before you answer. After a question is asked, there may be an objection. When you hear the word, “objection,” stop testifying.
8. Answer the question that is asked, then stop. Do not volunteer information not asked. Explain an answer if you feel your answer appears ambiguous or incomplete. You are always permitted to explain your answer. Tell the prosecutor prior to your testimony if there is anything you feel they do not know about the case.
9. Always be professional in the courthouse. Jurors could be anywhere at any time.
10. Speak loud and clear so that you can be easily heard.

11. Look at the judge/jury when testifying. Always make eye contact with who you are trying to convince. During a bench trial, look at the judge. During a jury trial, look at the jury. This applies even when the attorney asking the question is not standing near the judge or jury box. Always talk to the judge or jury and maintain eye contact with them, even if it feels unnatural.
12. Always be courteous, even when the defense attorney is not. Control your emotions, and never allow yourself to be drawn into an argument. Remember, the best way to make a good impression with the judge/jury is to be courteous and professional. You were just doing your job during the arrest and presenting the facts in court as they occurred.
13. Testify in plain language. 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 they do.
14. It is the best practice to discuss the case with the prosecutor before trial. A defense attorney may ask if you’ve had a pretrial conference with the prosecutor. Tell the truth. Preparation for court is acceptable. Be straight forward in answering all questions.
15. Always tell the truth. No case is worth sacrificing your credibility.

Specific DWI Trial Recommendations

1. Never give the numerical PBT 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 PBT results of a defendant do not apply to witnesses, such as passengers in the car.
2. Discuss with the prosecutor, pre-trial, whether or not to demonstrate how you conducted field sobriety tests. Be certain that you can do in court all the tests you asked the defendant to perform at the time of the arrest. If you cannot do them, the jury will not expect that the defendant could have done them properly.
3. Know the reasons for giving field sobriety tests:
 - They are **divided attention tests**, designed to detect when a person is impaired by alcohol and/or drugs
 - They provide evidence of impairment in cases where the defendant refuses to take a chemical test under implied consent
 - They prevent an arbitrary decision to arrest, and allow an officer to articulate the reasons for concluding that a driver was DWI
4. If you testify to the accuracy of the field sobriety tests, make sure you know the studies, percentages, and their significance. Considered independently, the nystagmus test was 88%

accurate, the Walk and Turn, 79% accurate, and the One Leg Stand, 83% accurate in identifying subjects whose BAC were .08 or more.

5. Remember, you should not testify that the defendant passed or failed the SFSTs. The tests are not “pass” or “fail.” You should testify if the defendant completed the tests as instructed. These tests simply identify impairment.

Sample DWI Incident Report

Defendant: Jarod Primo
Age: 31
Date of Birth: 10/03/XX
Date of Arrest: XX-XX-XX
Time of Arrest: 9:20 pm
CA - D.L. #: CA 1234567

First Observations:

On XX-XX-XX at approximately 9:00 p.m., I was patrolling northbound on State Road 113, a four-lane divided highway, traveling toward Woodland, California in Yolo County. I observed a white sport utility vehicle traveling ahead of me northbound in the right lane of SR 113. I noticed the S/V drift outside of its travel lane to the left, crossing the line divider the entire width of its left side tires. The vehicle corrected its path, returned to the right lane, and then drifted to the left again. The left side tires again crossed completely over the center line before the vehicle corrected and returned to the right lane. As I moved closer to the vehicle, I noticed there was no license plate displayed on the rear of the S/V. I signaled for the vehicle to stop by activating my emergency lights. The driver did not respond for approximately 700-800 feet, so I activated an audible siren to alert the driver. After a few more seconds, the driver reacted to my signal and exited the freeway at exit 34, County Road 25A and crossed over the fog line. At the foot of the ramp the S/V did not stop at the stop sign or signal his turn but rolled through it during a right turn onto CR 25A. The S/V made another right turn and came to a stop on County Road 100 approximately 300 feet south of CR 25A.

Observations After the Stop:

I approached the S/V on the passenger side and made contact with the driver who was the sole occupant. I immediately noticed the driver had red, bloodshot, watery eyes. I advised him of the reasons for the stop and asked if his vehicle had any mechanical problems. He stated, "no." I requested his driver's license, registration, and insurance. The driver handed me a visa credit card, which was removed from his wallet located in a storage pocket in the center of his vehicle dashboard. He did not attempt to produce his registration or insurance card. I asked him where he was coming from. He replied "Downtown," and that he had been "with some friends." I noticed his speech was slurred when he was speaking to me and I detected the odor of an alcoholic beverage that was greater when he spoke. I asked him where he was headed and he replied, "just going home." I informed him he had produced a credit card and asked again for him to produce his driver license. When he provided his driver license, I identified the driver by the photo on his California driver license (#CA1234567) as Jared Primo. I asked him how much alcohol he had consumed tonight, and he replied, "Just a couple of drinks." I asked him again for his registration and proof of insurance and he reached into his glove box and retrieved his vehicle registration.

I noticed his movements were uncoordinated as he leaned over and retrieved this document. I asked him to exit the vehicle and step to the front of his vehicle car. He asked "Why? What's going on?" I informed him I detected the odor of an alcoholic beverage coming from within the vehicle and I wanted to ensure he was safe to drive. He rolled his eyes and muttered "Whatever," but complied with my request. When he stepped from the vehicle he was

unsteady on his feet and staggered slightly as he walked towards the front of the vehicle. I asked him several pre-field sobriety test questions. As I communicated with him, I continued to smell an odor of alcoholic beverage emitting from his breath. The defendant stated he had no mechanical problems with his vehicle, he was not sick or injured, and he had no physical problems. He stated he ate some pizza “a few hours ago,” he was not aware of the location where we were stopped, and that he had consumed two beers between 2-3 hours ago when he was downtown. While questioning the defendant, he occasionally swayed forward and backward.

Field Sobriety Tests:

This evaluation was performed on the west shoulder of CR 100 Drive, just south of CR 25A. The evaluation surface was level packed dirt. Lighting conditions consisted of patrol vehicle headlights, spotlights, overhead lights, and my flashlight. The weather was clear with a slight breeze and Primo was wearing athletic shoes.

Horizontal Gaze Nystagmus (explained):

In checking Primo’s eyes, I observed equal tracking in both eyes, equal pupil size in both eyes, and no resting nystagmus in either eye. 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 Primo’s eyes. Vertical Gaze Nystagmus was not observed.

Walk and Turn (explained and demonstrated):

Instruction Stage: Lost balance (feet broke apart) and swayed noticeably from side to side.
Walking Stage: Raised left arm over 6 inches away from body to assist with balance at steps 3 and 5 during the first set of nine steps and raised his right arm during the second set of steps from 3-8. Missed heel to toe once (#6 during first set of nine steps). Turn: Primo only took one step during the turn instead of several small steps as instructed.

One Leg Stand (explained and demonstrated):

Primo raised his right foot and began counting. He put his foot down on counts 1010 and 1014. He used his arms for balance (6+ inches from body) and was swaying while balancing on many occasions. He hopped on 1013. He counted to 1014 during the thirty seconds of the test.

Arrest:

Based on the following information, I formed the opinion that Primo was driving under the influence:

- Driving at night with no license plate
- Weaving out of his lane into another lane
- Driving to the right of the solid white fog line freeway
- Failing to stop for stop sign when exiting SR 113 at CR 25A
- I observed divided attention problems while retrieving his license/registration and insurance
- His red, bloodshot, watery eyes and slurred speech
- His admissions to consuming alcoholic beverages
- Staggering after exiting vehicle
- Odor of alcoholic beverage emitting from his breath
- I observed signs of impairment as he performed the standardized field sobriety tests

I arrested Primo for driving under the influence of an alcoholic beverage at 9:20 p.m. Primo was given the proper chemical testing advisement. He chose a breath test and was transported to the breath testing facility. He provided two breath samples of 0.095 and 0.092 at 9:50 p.m. and 9:52 p.m. He was then booked along with his property.

Recommendations:

I recommend a copy of this report be forwarded to the district attorney's office for review and prosecution of Primo for driving under the influence and driving with a blood alcohol concentration at or above the legal state limit.

Vehicle Disposition:

Primo's vehicle was stored by Reliable Towing.

12 **SFST**

Moot Court

LEARNING OBJECTIVES

- Discuss the need for competent courtroom testimony
- Demonstrate the proper techniques of courtroom testimony

CONTENTS

A. Procedures	2
B. Moot Court Exercise	3

LEARNING ACTIVITIES

- Instructor-Led Presentations
- Participant's Courtroom Testimony Exercise
- Instructor-Led Discussion

Session 12 – Moot Court

Learning Objectives

- Discuss need for competent courtroom testimony
- Demonstrate proper techniques of courtroom testimony



DWI DETECTION & SFST 12-2

Slide 2.

A. Procedures

Session 12 – Moot Court

Courtroom Testimony



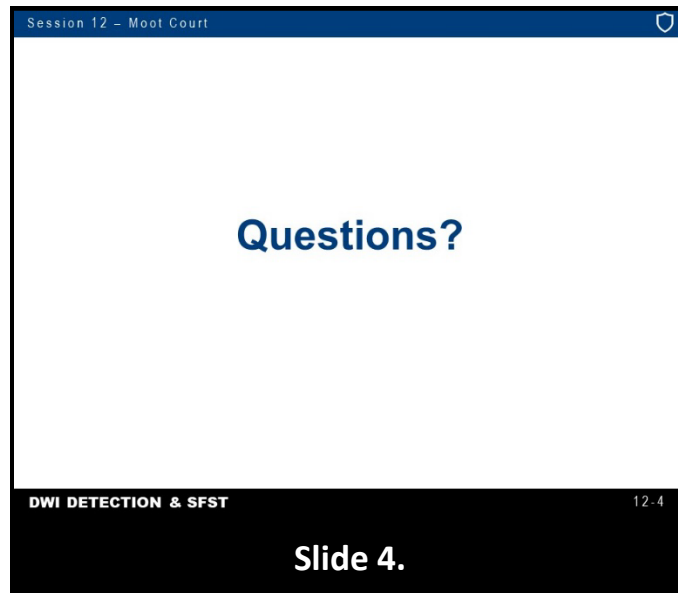
DWI DETECTION & SFST 12-3

Slide 3.

The purpose of this exercise is to have you demonstrate your ability to testify in a logical sequence to the evidence you collected during the three phases of DWI Detection with Report Writing video.

B. Moot Court Exercise

A representative from each group will be called to testify. You should only testify to what you actually observed. You may refer to your written reports if necessary.



13

SFST

Alcohol Workshop: Second Session

LEARNING OBJECTIVES

- Properly administer the Standardized Field Sobriety Tests (SFSTs)
- Properly observe and record subject's performance utilizing the field note-taking guide
- Properly interpret the subject's performance

CONTENTS

A. Procedures	2
B. Hands On Practice.....	3
C. Session Wrap Up	3

LEARNING ACTIVITIES

- Instructor-Led Presentations
- Participant Practice Session
- Instructor-Led Discussion

Session 13 – Alcohol Workshop: Second Session

Learning Objectives

- Properly administer SFSTs
- Properly observe and record subject's performance utilizing field note-taking guide
- Properly interpret subject's performance



DWI DETECTION & SFST 13-2

Slide 2.

A. Procedures

Session 13 – Alcohol Workshop: Second Session

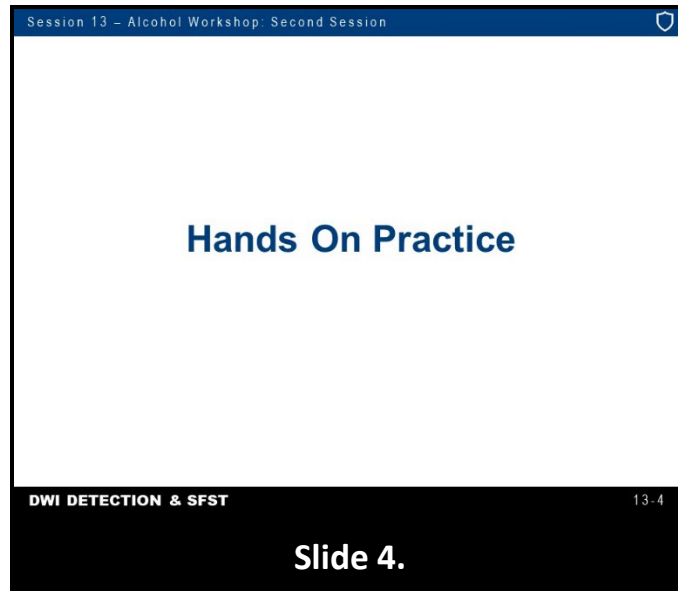
Administer SFSTs

- Volunteers who have consumed alcohol
- Each team member will administer one complete series of tests to at least one drinking volunteer
- Each team prepares a descriptive, written test record on each volunteer tested

DWI DETECTION & SFST 13-3

Slide 3.

B. Hands On Practice



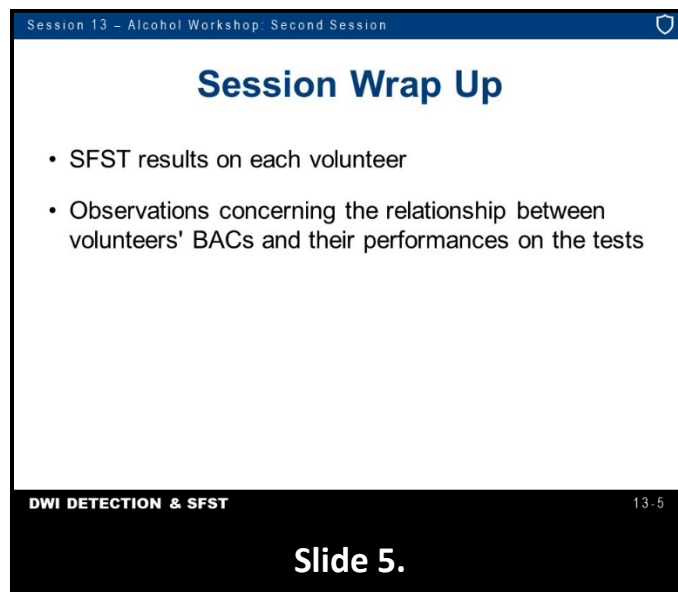
Session 13 – Alcohol Workshop: Second Session

Hands On Practice

DWI DETECTION & SFST 13-4

Slide 4.

C. Session Wrap Up



Session 13 – Alcohol Workshop: Second Session

Session Wrap Up

- SFST results on each volunteer
- Observations concerning the relationship between volunteers' BACs and their performances on the tests

DWI DETECTION & SFST 13-5

Slide 5.



Questions?

DWI DETECTION & SFST

13-6

Slide 6.

SFST Log

Date	Name	HGN	WAT	OLS	BAC +/- .08	Arrest/ Not Arrest	Measured BAC	Remarks

SFST

Session 13-A

Dry Lab: Second Session

LEARNING OBJECTIVES

- Properly administer the Standardized Field Sobriety Tests (SFSTs)
- Properly observe and record subject's performance utilizing the field note-taking guide
- Properly interpret the subject's performance
- Properly use and maintain the SFST log

CONTENTS

A. Procedures	2
B. Hands On Practice.....	2
C. Use and Maintenance of SFST Log.....	3
D. Session Wrap Up.....	4

LEARNING ACTIVITIES

- Instructor-Led Presentations
- Participant Practice Session
- Instructor-Led Presentation
- Instructor-Led Discussion

Session 13-A – Dry Lab

Learning Objectives

- Properly administer SFSTs
- Properly observe and record subject's performance utilizing field note-taking guide
- Properly interpret subject's performance
- Properly use and maintain SFST Log



DWI DETECTION & SFST 13A-2

Slide 2.

A. Procedures

Session 13-A – Dry Lab

Procedures

- Same teams as dry run
- Each subject will be viewed performing all three tasks
- Only one opportunity to view each subject
- Record number of clues observed in appropriate boxes on video recording worksheet

DWI DETECTION & SFST 13A-3

Slide 3.

B. Hands On Practice

C. Use and Maintenance of SFST Log

Session 13-A – Dry Lab

SFST Log

SFST Log

Date	Name	HGN	WAT	OLS	BAC +/- .08	Arrest/ Not Arrest	Measured BAC	Remarks

DWI DETECTION & SFST 13A-4

Slide 4.

The SFST Log is used to record the results of the SFSTs performed on suspected impaired subjects.

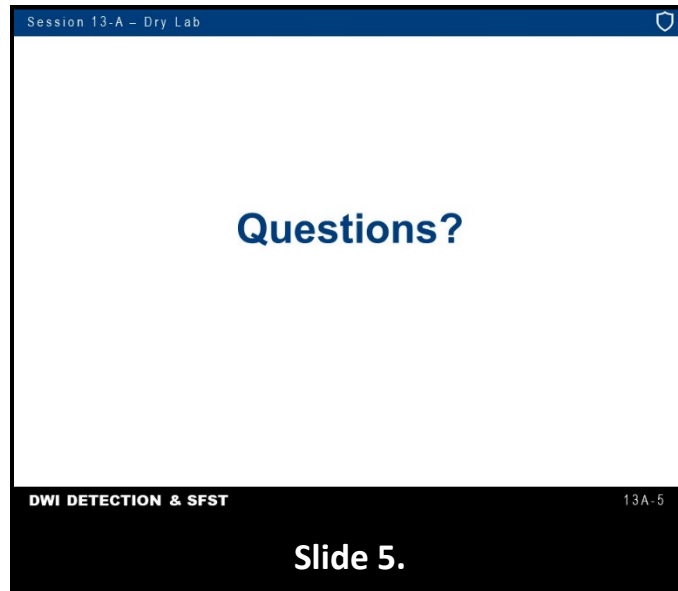
This log is important in documenting an officer's experience and proficiency in performing and interpreting SFSTs. It is highly recommended by the IACP and the National Highway Traffic Safety Administration (NHTSA), that officers utilize an SFST log for the following reasons:

- Records training proficiency
- Records field proficiency
- Documents the officer's experience

All of these combined helps to establish the officer's credibility in administering the SFSTs and may be used as evidence in court. This log has the following components:

- The actual date the SFSTs were administered
- Subject's full name
- Results of each SFST test
- Classification of BAC as above or below 0.08 BAC
- Arrest/Not Arrest
- Subject's measured BAC (if available)

D. Session Wrap Up



SFST Log

Date	Name	HGN	WAT	OLS	BAC +/- .08	Arrest/ Not Arrest	Measured BAC	Remarks

Video Recording Sheet

SUSPECT'S NAME: _____ OFFICER'S NAME: _____

Pupil Size: ☐ Equal ☐ Unequal	Tracking: ☐ Equal ☐ Unequal	Unequal Pupil Size: Explain:	
Resting Nystagmus ☐ Yes ☐ No	Eyelids: ☐ Normal ☐ Droopy		
Lack of Smooth Pursuit	Left Eye	Right Eye	Vertical Nystagmus ☐ Yes ☐ No
Distinct and Sustained Nystagmus at Maximum Deviation	Left Eye	Right Eye	Eyes: ☐ Normal ☐ Bloodshot ☐ Watery
Onset of Nystagmus Prior To 45 Degrees			

HGN CLUES

Observed	Actual

WALK AND TURN TEST Cannot keep balance _____ Starts too soon _____



Stops Walking
 Misses Heel-to-Toe
 Steps Off Line
 Uses Arms
 Actual Steps Taken

1st Nine 2nd Nine

WALK AND TURN

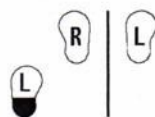
Observed	Actual

Improper Turn (Describe)	Cannot Do Test (Explain)
--------------------------	--------------------------

Team Information Team No: _____ Arrest Decision: Yes: _____ No: _____ BAC: Above 0.08: _____ Below 0.08: _____
--

ONE LEG STAND

L	R
☐	☐
☐	☐
☐	☐
☐	☐



Sways while balancing
 Uses arms to balance
 Hopping
 Puts foot down

ONE LEG STAND

Observed	Actual

14

SFST

Review and Proficiency Examinations

LEARNING OBJECTIVES

- Demonstrate knowledge and proficiency in administering the Standardized Field Sobriety Tests (SFSTs)

CONTENTS

A. Review of Horizontal Gaze Nystagmus	2
B. Review Walk and Turn	8
C. Review of One Leg Stand	12
D. D. Proficiency Examination	15

LEARNING ACTIVITIES

- Instructor-Led Presentations
- Instructor- and Participant-Led Demonstrations
- Video Demonstration (Second Showing IF TIME PERMITS)
- Participant Proficiency Examination

Session 14 – Review and Proficiency Examinations

Learning Objective

- Demonstrate knowledge and proficiency in administering SFSTs



DWI DETECTION & SFST 14-2

Slide 2.

A. Review of Horizontal Gaze Nystagmus

Session 14 – Review and Proficiency Examinations

Horizontal Gaze Nystagmus Review

Involuntary jerking of the eyes, occurring as the eyes gaze to the side



DWI DETECTION & SFST 14-3

Slide 3.

Involuntary jerking of the eyes, occurring as the eyes gaze to the side. The subject is generally unaware of the nystagmus. Nystagmus is caused by alcohol and/or other drugs and some medical conditions.

Session 14 – Review and Proficiency Examinations

Three Clues of Horizontal Gaze Nystagmus

- Lack of Smooth Pursuit
- Distinct and Sustained Nystagmus at Maximum Deviation
- Onset of Nystagmus Prior to 45 Degrees

DWI DETECTION & SFST 14-4

Slide 4.

Three specific clues of HGN. Look for these clues in each eye:

- Lack of Smooth Pursuit
 - Distinct and Sustained Nystagmus at Maximum Deviation
 - Onset of Nystagmus Prior to 45 Degrees
-

Session 14 – Review and Proficiency Examinations

Clue Number 1

Lack of Smooth Pursuit



DWI DETECTION & SFST 14-5

Slide 5.

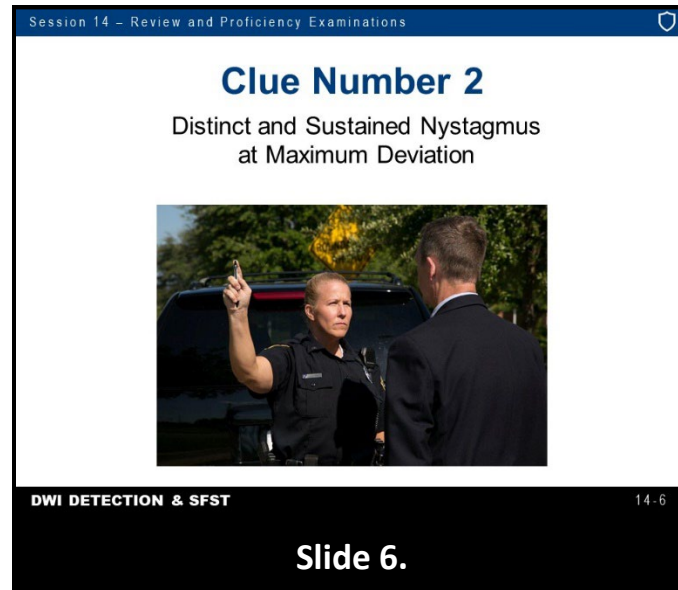
Position stimulus approximately 12-15 inches (30-38 cm) in front of subject's nose, slightly above eye level.

Start with the left eye.

Move the stimulus smoothly all the way to the right (checking subject's left eye) then all the way to the left (checking subject's right eye).

Make at least two complete passes.

Observe eyes for lack of smooth pursuit as they move side to side.



Move the stimulus to the right until the subject's left eye reaches maximum deviation.

Verify no white is showing in the corner of the eye.

Hold the stimulus steady for a minimum of four seconds and watch for distinct and sustained nystagmus.

Repeat for right eye.

Check each eye twice for each clue.

Session 14 – Review and Proficiency Examinations

Clue Number 3

Onset of Nystagmus Prior to 45 Degrees



DWI DETECTION & SFST 14-7

Slide 7.

Position stimulus approximately 12-15 inches (30-38 cm) in front of subject's nose, slightly above eye level.

Begin to make a slow pass in front of the left eye.

When you see nystagmus, stop the stimulus.

Hold the stimulus steady and verify the nystagmus continues.

Verify there is still some white showing in the corner of the eye.

Repeat for right eye.

Check each eye twice for each clue.



Administrative Procedures

- Eyeglasses
- Verbal instructions
 - Feet together, arms down at sides
 - Head still
 - Look at stimulus
 - Follow movement with eyes
- Position stimulus (12-15 inches)(30-38 cm)
- Pupil size and Resting Nystagmus
- Equal Tracking

DWI DETECTION & SFST

14-8

Slide 8.

Step 1: Check for Eyeglasses

Step 2: Verbal Instructions

- Feet together, arms down at sides
- Head still
- Look at stimulus
- Follow movement with eyes

Step 3: Positioning the Stimulus

Step 4: Pupil Size and Resting Nystagmus

Step 5: Check for Equal Tracking

Session 14 – Review and Proficiency Examinations

Administrative Procedures

- Check for Lack of Smooth Pursuit
- Check for Distinct and Sustained Nystagmus at Maximum Deviation
- Check for Onset of Nystagmus Prior to 45 Degrees
- Total the clues
- Check for VGN

DWI DETECTION & SFST 14-9

Slide 9.

Step 6: Check for Lack of Smooth Pursuit

Step 7: Check for Distinct and Sustained Nystagmus at Maximum Deviation

Step 8: Check for Onset of Nystagmus Prior to 45 Degrees

Step 9: Total the clues

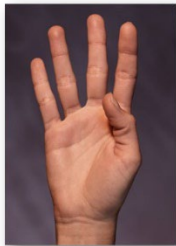
Step 10: Check for Vertical Gaze Nystagmus (VGN)

Check each eye independently beginning with the subject's left and compare.

Session 14 – Review and Proficiency Examinations

Horizontal Gaze Nystagmus Test Criterion

4 or more clues indicates BAC
above 0.08 (88% accurate)



DWI DETECTION & SFST 14-10

Slide 10.

Maximum possible number of clues is 6. Test criterion is 4 or more. Test is 88% accurate based on the San Diego validation study.

Initial positioning of stimulus. Check for each clue. Estimate a 45-degree angle.

B. Review Walk and Turn

Session 14 – Review and Proficiency Examinations

Walk and Turn

Divided Attention
Mental Task and Physical Task

- Instruction stage
- Walking stage



DWI DETECTION & SFST 14-11

Slide 11.

1. Instruction stage
2. Walking stage

Place your right foot on the line ahead of the left foot, with the heel of your right foot against the toe of the left foot, keeping the arms at the sides. Maintain this position until I have completed the instructions. Do not start until told to do so.



Administrative Procedures

Verbal instructions:

- Assume heel-to-toe stance
- Arms down at sides
- Don't start until told
- 9 heel-to-toe steps turn, 9 heel-to-toe steps

Turn procedures:

- Turn around on the line
- Several small steps

DWI DETECTION & SFST

14-12

Slide 12.

Verbal instructions:

- Assume heel-to-toe stance
- Arms down at sides
- Don't start until told
- 9 heel-to-toe steps turn, 9 heel-to-toe steps

Turn procedures:

- Turn around on line
 - Several small steps
-



Administrative Procedures

While walking:

- Keep watching feet
- Arms down at sides
- Count steps out loud
- Don't stop during walk

DWI DETECTION & SFST

14-13

Slide 13.

While walking:

- Keep watching feet
 - Arms down at sides
 - Count steps out loud
 - Don't stop during walk
-

Session 14 – Review and Proficiency Examinations

Walk and Turn Test Clues

- Cannot keep balance
- Starts too soon
- Stops while walking
- Does not touch heel-to-toe
- Steps off the line
- Uses arm(s) to balance
- Improper turn
- Incorrect number of steps

DWI DETECTION & SFST 14-14

Slide 14.

There are eight possible clues for the WAT test:

- Cannot keep balance (feet break away from the heel-to-toe stance)
- Starts too soon (subject starts walking before told to do so)
- Stops while walking
- Does not touch heel-to-toe
- Steps off line
- Uses arm(s) to balance
- Improper turn
- Incorrect number of steps

Session 14 – Review and Proficiency Examinations

Walk and Turn Test Criterion

2 or more clues indicates BAC
above 0.08 (79% accurate)



DWI DETECTION & SFST 14-15

Slide 15.

Eight specific clues of impairment. Test criterion is 2 or more. Test is 79% accurate based on the San Diego validation study.

C. Review of One Leg Stand

Session 14 – Review and Proficiency Examinations

One Leg Stand

Divided Attention Test
Mental Task and Physical Task

- Instruction stage
- Balance and counting stage



DWI DETECTION & SFST 14-16

Slide 16.

1. Instruction Stage
 2. Balance and Counting stage
-

Session 14 – Review and Proficiency Examinations

Administrative Procedures

Instruction stage:

- Stand straight, feet together
- Keep arms at sides
- Maintain position until told otherwise

DWI DETECTION & SFST 14-17

Slide 17.

Stand with your feet together with your arms down at your sides.

Hold position until told to begin.



Administrative Procedures

Balance and counting stage:

- Raise either leg
- Keep raised foot approximately six inches (15 cm) off ground, foot parallel to the ground
- Keep both legs straight and arms at your side
- Keep eyes on raised foot
- Count out loud in the following manner:
“One thousand one, one thousand two,
one thousand three and so on”, until told to stop

DWI DETECTION & SFST

14-18

Slide 18.

Simple verbal instructions:

- When I tell you to start, raise either leg with the foot approximately six inches off the ground, keeping your raised foot parallel to the ground
- Keep both legs straight and your arms at your side
- Keep both legs straight and to look at elevated foot
- Count out loud in the following manner: “one thousand one, one thousand two, one thousand three,” and so on until told to stop

Simple physical demonstrations:

- Demonstrate OLS
- Demonstrate counting

Session 14 – Review and Proficiency Examinations

One Leg Stand Test Clues

- Sways while balancing
- Uses arm(s) to balance
- Hopping
- Puts foot down

DWI DETECTION & SFST 14-19

Slide 19.

There are four specific clues of impairment for the OLS test

- Sways while balancing
- Uses arm(s) to balance
- Hopping
- Puts foot down

Session 14 – Review and Proficiency Examinations

One Leg Stand Test Criterion

Two or more clues indicates BAC
above 0.08 (83% accurate)

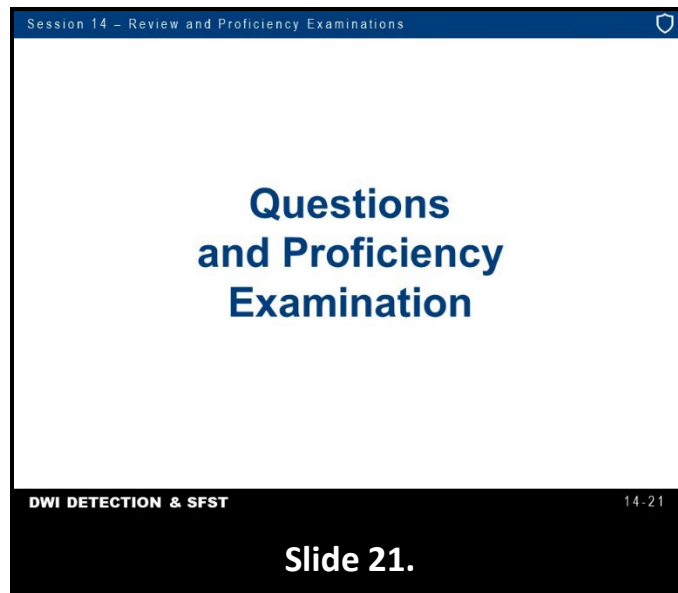


DWI DETECTION & SFST 14-20

Slide 20.

Test criterion is 2 or more. Test is 83% accurate based on the San Diego validation study.

D. D. Proficiency Examination



- Demonstrate ability to give proper verbal instructions
 - Demonstrate ability to carry out the mechanics of testing for each clue
 - Demonstrate ability to estimate a 45-degree angle
 - Demonstrate ability to give proper verbal instructions
 - Demonstrate ability to carry out appropriate physical demonstrations to support the verbal instructions
 - Demonstrate ability to give proper verbal instructions
 - Demonstrate ability to carry out appropriate physical demonstrations to support the verbal instructions
-

**PARTICIPANT PROFICIENCY EXAMINATION
STANDARDIZED FIELD SOBRIETY TESTs**

Name _____ Date _____/_____/_____

Agency _____

I. HORIZONTAL GAZE NYSTAGMUS

1. _____ Have subject remove glasses if worn.
2. _____ Gives verbal instructions.
3. _____ Stimulus held in proper position (approximately 12"-15" from nose, just slightly above eye level).
4. _____ Check for equal pupil size and resting nystagmus.
5. _____ Check for equal tracking.
6. _____ Lack of Smooth Pursuit: 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)
7. _____ Distinct & Sustained Nystagmus at Maximum Deviation: Eye held at maximum deviation for a minimum of 4 seconds (no white showing).
Check left eye, then right eye. (Repeat)
8. _____ Onset of Nystagmus Prior to 45 Degrees: Eye moved slowly (approximately 4 seconds) from center to 45 angle.
Check left eye, then right eye. (Repeat)
9. _____ Total the number of clues.
10. _____ 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 walking 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 asks 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 one, one thousand two, one thousand three, and so on until told to stop, and gives demonstration.
7. _____ Asks subject if all instructions are understood.
8. _____ Checks actual time subject holds leg up. (Time for 30 seconds.).

Instructor: _____

Note: In order to pass the proficiency examination, the student must explain and proficiently complete each of the steps listed.

15

SFST

Written Examination and Program Conclusion

LEARNING OBJECTIVES

- Complete a written examination with a passing grade
- Provide comments and suggestions for improving the course

CONTENTS

A. Post Test.....	7
B. Critique.....	7
C. Review of Post Test.....	8
D. Concluding Remarks	8
E. Certificates and Dismissal	9

LEARNING ACTIVITIES

- Written Participant Examination
- Written Participant Critique
- Instructor-Led Presentation

1.

Session 15 – Written Examination and Program Conclusion

Learning Objectives

- Complete written examination with passing grade
- Provide comments and suggestions for improving course



DWI DETECTION & SFST 15-2

Slide 2.

Session 15 – Written Examination and Program Conclusion

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?

DWI DETECTION & SFST 15-3

Slide 3.

Suggested topics for review to prepare for the test.

- Approximately what 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?

Session 15 – Written Examination and Program Conclusion

Deterrence and DWI

- About how many times does the average DWI violator drive intoxicated before arrest?
- An alcohol-related crash at night is more likely to result in death than is a non alcohol related crash. How many times more likely?

DWI DETECTION & SFST 15-4

Slide 4.

- About how many times does the average DWI violator drive intoxicated before arrest?
 - An alcohol-related crash at night is more likely to result in death than is a non-alcohol-related crash. How many times more likely?
-

Session 15 – Written Examination and Program Conclusion

Detection Phases

- What are the three phases of detection?
- What is the definition of "DWI detection"?
- What is the police officer's principal decision during Detection Phase One?
- During Phase Two?
- During Phase Three?

DWI DETECTION & SFST 15-5

Slide 5.

- What are the three phases of detection?
 - What is the definition of "DWI detection"?
 - What is the police officer's principal decision during Detection Phase One?
 - During Phase Two?
 - During Phase Three?
-

Session 15 - Written Examination and Program Conclusion

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 states suspected DWI drivers are deemed to have given their consent to submit to chemical testing.
- True or False: A person cannot be convicted of DWI if BAC was below 0.05.

DWI DETECTION & SFST 15-6

Slide 6.

- 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 states suspected DWI drivers are deemed to have given their consent to submit to chemical testing.
 - True or False: A person cannot be convicted of DWI if BAC was below 0.05.
-

Session 15 - Written Examination and Program Conclusion

Alcohol Physiology

- True or False: Alcohol is the most abused drug in the United States.
- Name three of the more commonly known alcohols.

DWI DETECTION & SFST 15-7

Slide 7.

- True or False: Alcohol is the most abused drug in the United States.
 - Name three of the more commonly known alcohols.
-

Session 15 – Written Examination and Program Conclusion

Field Sobriety Testing

- What does "nystagmus" mean?
- WAT is an example of a _____ attention test
- Name the eight distinct clues of WAT
- Name the four distinct clues of OLS
- Name the three distinct clues of HGN

DWI DETECTION & SFST 15-8

Slide 8.

- What does "nystagmus" mean?
 - Walk and Turn (WAT) is an example of a _____ attention test.
 - Name the eight distinct clues of WAT.
 - Name the four distinct clues of One Leg Stand (OLS).
 - Name the three distinct clues of Horizontal Gaze Nystagmus (HGN).
-

Session 15 – Written Examination and Program Conclusion

Field Sobriety Testing

- What is the critical angle for determining whether the third clue of HGN is present?
- How many steps in each direction must the subject take in the WAT test?
- How long must the subject stand on one foot in the OLS test?

DWI DETECTION & SFST 15-9

Slide 9.

- What is the critical angle for determining whether the third clue of HGN is present?
- How many steps in each direction must the subject take in the WAT test?
- How long must the subject stand on one foot in the OLS test?



Field Sobriety Testing

- In the WAT test, a subject who steps off the line during the first 9 steps and once again during the second 9 steps and who uses arm(s) to balance twice during the second 9 steps has produced ____ distinct clue(s).
- How reliable is each test using the San Diego study?

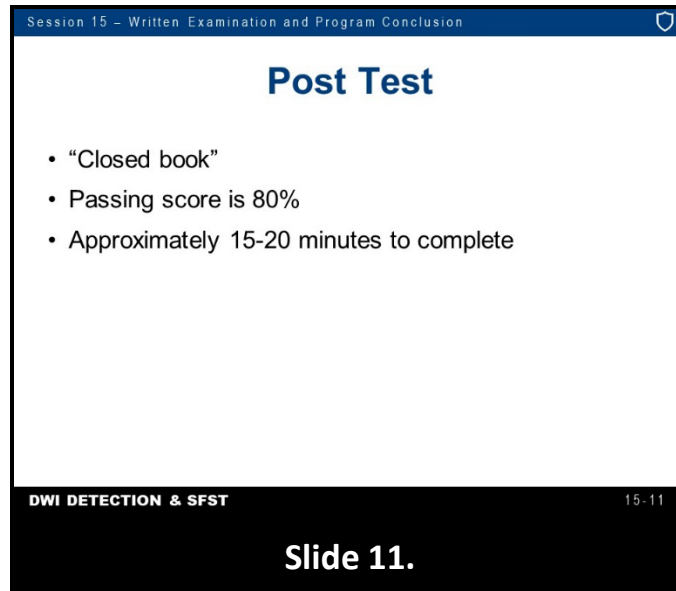
DWI DETECTION & SFST

15-10

Slide 10.

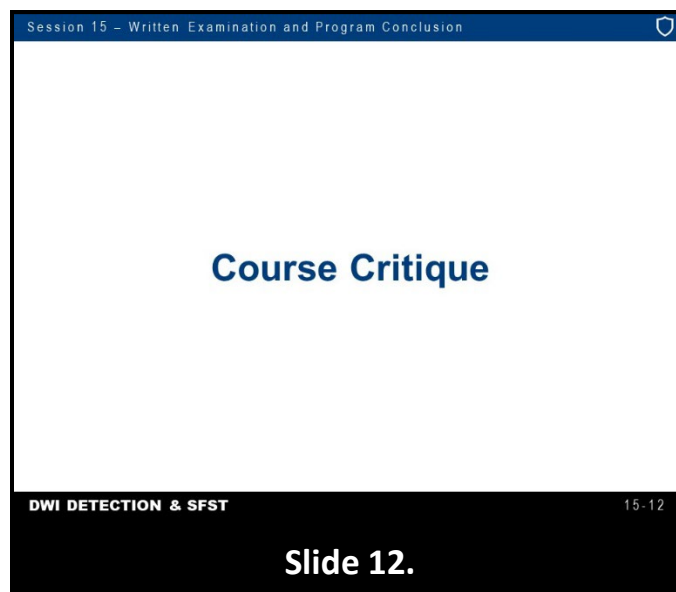
- In the WAT test, a subject who steps off the line during the first 9 steps and once again during the second 9 steps and who uses arm(s) to balance twice during the second 9 steps has produced ____ distinct clue(s).
- How reliable is each test using the San Diego field validation study?

A. Post Test



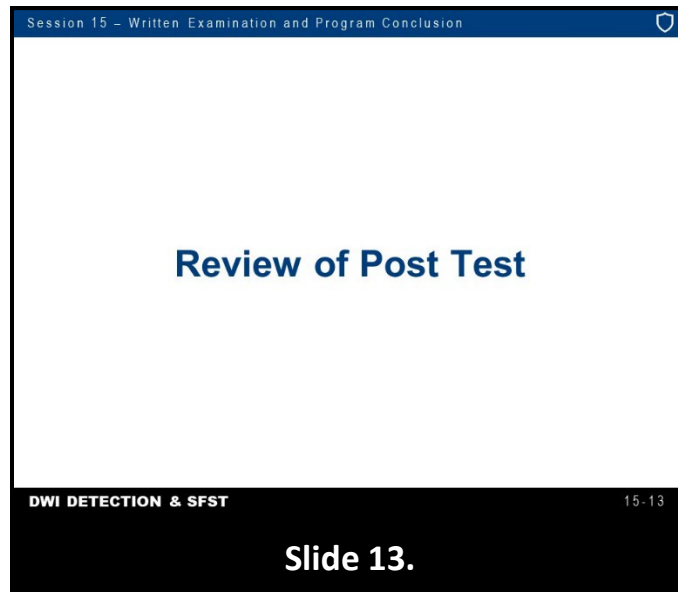
Purpose of the Post Test: to compare with pretest and determine extent of knowledge gained by participants.

B. Critique



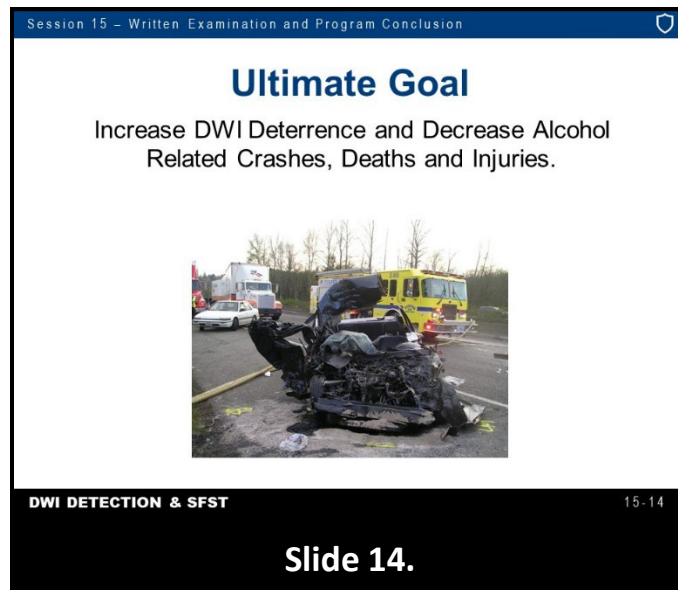
Purpose of the critique form: To identify possible improvements that can and should be made to this program.

C. Review of Post Test



If passing score is not achieved, participant(s) will be allowed to take a “make up” exam at a future date not less than fifteen days nor more than 30 days from the completion of the course.

D. Concluding Remarks



E. Certificates and Dismissal

Session 15 – Written Examination and Program Conclusion

Job Performance Objectives

You will become better able to:

- Recognize and interpret evidence of DWI violations
- Administer and interpret validated psychophysical SFSTs
- Describe DWI evidence clearly and convincingly

DWI DETECTION & SFST 15-15

Slide 15.

Session 15 – Written Examination and Program Conclusion

Questions?

DWI DETECTION & SFST 15-16

Slide 16.

DWI Detection and SFST - Course and Instructor Evaluation

For items 1-6, please select your level of agreement with the following statements. Include any additional information in the space provided.

Item	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. This course enabled me to understand enforcement's role in general DWI deterrence. Comments: _____ _____	○	○	○	○	○
2. This course enabled me to understand the detection phases. Comments: _____ _____	○	○	○	○	○
3. This course enabled me to understand the requirements for organizing and presenting testimonial and documentary evidence in DWI cases. Comments: _____ _____	○	○	○	○	○
4. This course enabled me to improve my ability to recognize and interpret evidence of DWI violations. Comments: _____ _____	○	○	○	○	○
5. This course enabled me to administer and interpret validated psychophysical tests to DWI subjects. Comments: _____ _____	○	○	○	○	○
6. This course enabled me to improve my ability to describe DWI evidence clearly and convincingly in written reports and verbal testimony. Comments: _____ _____	○	○	○	○	○

Please rate how helpful each workshop session was for you personally.

Item	Poor	Fair	Good	Very Good	Excellent
Detection and General Deterrence	☐	☐	☐	☐	☐
The Legal Environment	☐	☐	☐	☐	☐
Overview of Detection, Note Taking and Testimony	☐	☐	☐	☐	☐
Phase One: Vehicle in Motion	☐	☐	☐	☐	☐
Phase Two: Personal Contact	☐	☐	☐	☐	☐
Phase Three: Pre-Arrest Screening	☐	☐	☐	☐	☐
Concepts and Principles of Standardized Field Sobriety Tests	☐	☐	☐	☐	☐
Test Battery Demonstrations	☐	☐	☐	☐	☐
“Dry Run” Practice	☐	☐	☐	☐	☐
“Drinking Subjects” Practice	☐	☐	☐	☐	☐
Processing the Arrested Subject and Preparation for Trial	☐	☐	☐	☐	☐
Report Writing Exercise and Moot Court	☐	☐	☐	☐	☐

Please mark the appropriate word to indicate your agreement or disagreement with each of the following statements.

Item	Agree	Disagree	Not Sure
The program contains some information that is not needed and that should be deleted.	☐	☐	☐
There are some important topics missing from the program that should be added.	☐	☐	☐
The program is too short.	☐	☐	☐
I feel this program has improved my own ability to enforce DWI laws.	☐	☐	☐
The instructors did a good job.	☐	☐	☐
I am very glad I attended the program.	☐	☐	☐
The program is too long.	☐	☐	☐
The instructors should have been better prepared.	☐	☐	☐
I feel fully qualified to use the nystagmus test now.	☐	☐	☐

Item	Agree	Disagree	Not Sure
I feel fully qualified to use the two divided attention tests now.	☐	☐	☐
Too much time was spent practicing with drinking volunteers.	☐	☐	☐
These three new tests definitely will improve our ability to identify impaired drivers.	☐	☐	☐
I wish we had more practice with drinking volunteers.	☐	☐	☐

If you absolutely had to delete one session or topic from this course, what would it be?

If you could add one new topic or session to this course, what would it be?

	Poor	Fair	Good	Very Good	Excellent
Please rate the overall quality of the course.	☐	☐	☐	☐	☐

Please rate your instructors for this course. Rate the instructor(s) by selecting the appropriate response:

Instructor Name	Poor	Below Average	Average	Above Average	Excellent
Comments: _____ _____	☐	☐	☐	☐	☐
Comments: _____ _____	☐	☐	☐	☐	☐
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Name (optional): _____

SFST

Introduction to Drugged Driving

LEARNING OBJECTIVES

- Define the term “drug”
- Describe in approximate, quantitative terms the incidence of drug involvement in motor vehicle crashes and in DWI enforcement
- Name the categories of drugs
- Describe the observable signs usually associated with the drug categories
- Describe medical conditions and other situations that can produce similar signs
- Describe appropriate procedures for dealing with drug or medically impaired subjects

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C. Medical Conditions That May Mimic Drug Impairment	14
D. Drug Categories and Their Observable Effects	15
E. Combinations of Drugs	31
F. Dealing with Suspected Drug Influence or Medical Impairment.....	32

LEARNING ACTIVITIES

- Instructor-Led Presentations
- Participant Practice

Session Overview – Introduction to Drugged Driving

Learning Objectives

- Define term "drug"
- Describe drug involvement in motor vehicle crashes
- Name categories of drugs



DWI DETECTION & SFST

Intro-2

Slide 2.

Session Overview – Introduction to Drugged Driving

Learning Objectives

- Describe signs associated with drug categories
- Describe medical conditions
- Describe procedures for dealing with drug- or medically-impaired subjects

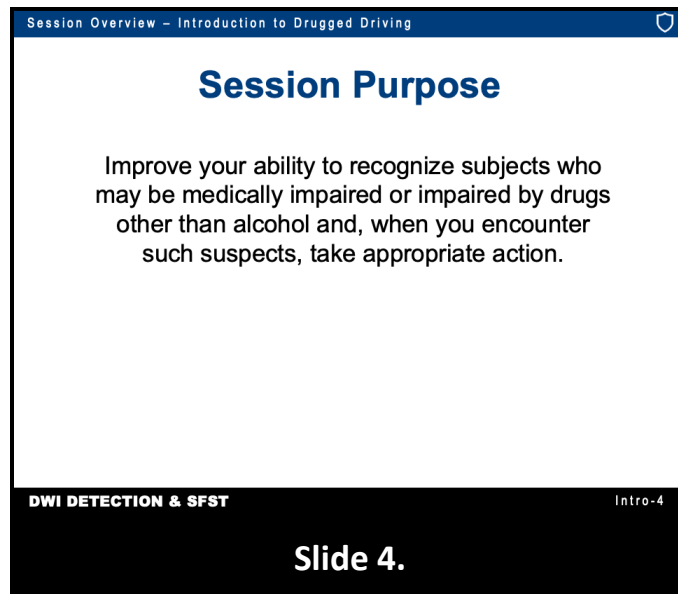


DWI DETECTION & SFST

Intro-3

Slide 3.

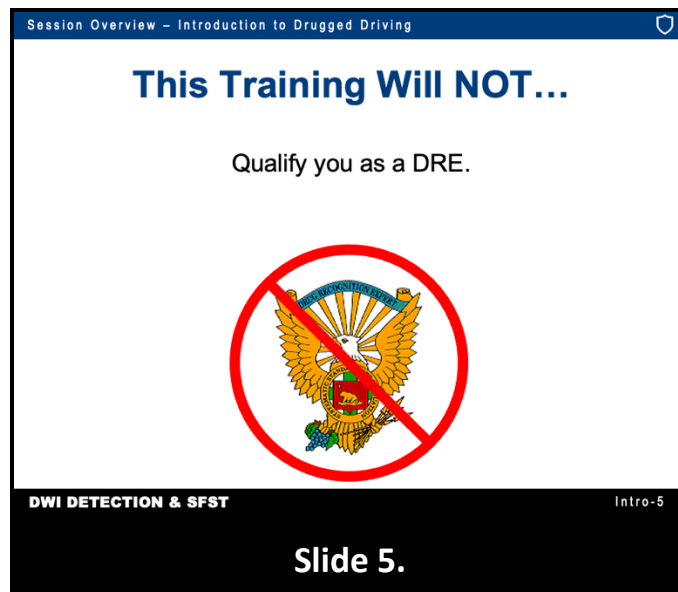
A. Overview



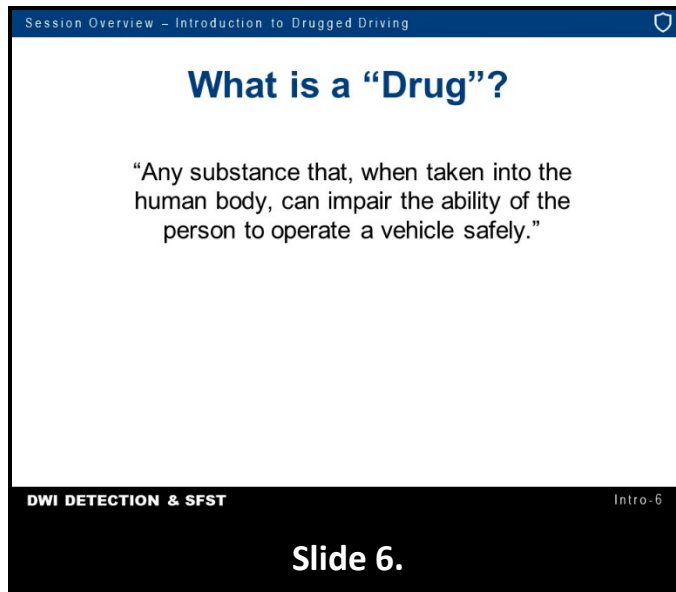
The purpose of this session is to improve your ability to recognize subjects who may be medically impaired or impaired by drugs other than alcohol and, when you encounter such subjects, take appropriate action.

Alcohol certainly remains the most frequently abused drug and most impaired drivers are under the influence of alcohol.

Many other drugs also are routinely abused by drivers. It is highly likely every experienced DWI enforcement officer has encountered at least some drivers who were under the influence of drugs other than alcohol. Depending upon the specific types of drugs they have taken, some drug-impaired drivers may look and act quite a bit like persons who are under the influence of alcohol, but others may look and act very differently from alcohol-impaired drivers. It is important you be able to recognize subjects who may be under the influence of other drugs, so you will know when to summon assistance from physicians or other appropriate persons or trained Drug Recognition Experts (DREs).



One important thing this session will not accomplish: it will NOT qualify you as a DRE. Officers become DREs only after they have completed a comprehensive program that includes nine days of classroom training and closely supervised on-the-job training. (Two-Day Pre-School followed by 7-Day classroom training.)



A Simple, Enforcement-Oriented Definition of Drugs: "Any substance that, when taken into the human body, can impair the ability of the person to operate a vehicle safely." (Working definition derived from the California Vehicle Code.)

This definition includes some substances physicians don't usually think of as drugs.

Within this simple, enforcement-oriented definition there are seven categories of drugs. Each category consists of substances that impair a person's ability to drive. The categories differ from one another in terms of how they impair driving ability and in terms of the kinds of impairment they cause.

Session Overview – Introduction to Drugged Driving

How Many People Use Drugs?

- Difficult to determine
- Widespread issue



DWI DETECTION & SFST Intro-7

Slide 7.

Because many drugs are illegally manufactured, sold, and consumed, it is difficult to determine how many people actually use the various drugs. All available information shows drug use and abuse are widespread among large segments of the public.

Session Overview – Introduction to Drugged Driving

NSDUH Self-Reported Drug Use

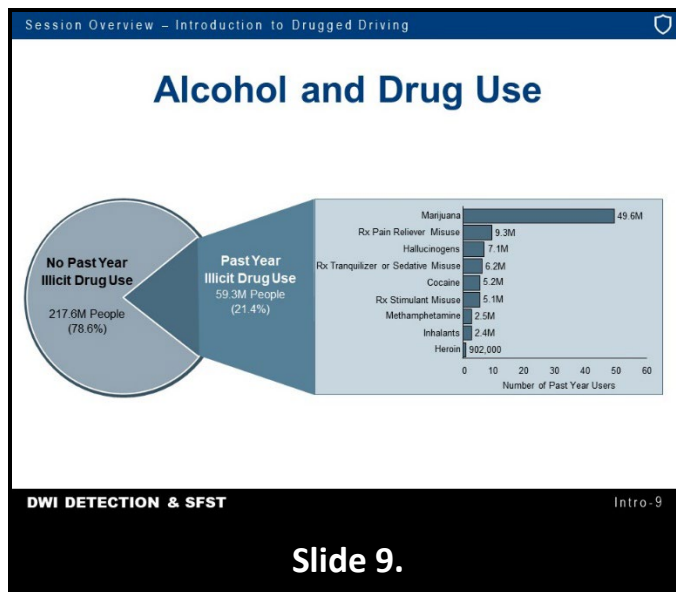
- In 2020, an estimated 37.3 million Americans aged 12 or older were current (past month) illicit drug users
- Marijuana was used by approximately 88 percent of all current illicit drug users

DWI DETECTION & SFST Intro-8

Slide 8.

The following summarizes the self-reported drug use information from the 2020 National Survey on Drug Use and Health (NSDUH):

- In 2020, an estimated 37.3 million Americans aged 12 or older were current (past month) illicit drug users
 - Marijuana was used by approximately 88 percent of all current illicit drug users
-



NSDUH provides additional details on drugs used within the past 30 days in a manner other than prescription:

Type	Number of Users
Cocaine	1.8 Million
Hallucinogens	1.8 Million
Psychotherapeutics	16.8 Million
Pain Relievers	2.5 Million
Tranquilizers	2.2 Million
Stimulants	1.5 Million
Sedatives	2.2 Million

Source:

2020 National Survey on Drug Use and Health (NSDUH) Release. (2021, October). Retrieved from Substance Abuse and Mental Health Services Administration:
<https://www.samhsa.gov/data/release/2020-national-survey-drug-use-and-health-nsduh-releases>

B. Eye Examinations: Detecting Signs of Drug Influence



The eyes can disclose indicators of drug impairment or medical conditions.

Horizontal Gaze Nystagmus (HGN) is an excellent indicator of possible alcohol impairment. There are a number of drugs other than alcohol that can cause HGN. There are a number of other drugs that will not cause HGN. There are many other clues the eyes will disclose, all of which will suggest the presence or absence of drugs or medical impairment.

Session Overview – Introduction to Drugged Driving

Gaze Nystagmus

- Resting Nystagmus – Occurs as eyes gaze straight ahead
- HGN
- VGN

DWI DETECTION & SFST Intro-11

Slide 11.

Resting Nystagmus is defined as the involuntary jerking of the eyes as they gaze straight ahead. This condition is not frequently observed. Its presence may indicate Dissociative Anesthetic usage, high levels of an impairing substance for that subject or certain medical problems. If detected, take precautions. As always, exercise sound officer safety techniques and consider calling for medical aid.

During this training we will focus on two types of nystagmus. Horizontal Gaze Nystagmus (HGN) occurs as the eyes gaze to the side. HGN is useful in determining alcohol influence as well as some drug categories. Vertical Gaze Nystagmus (VGN) occurs as the eyes gaze upward (vertical plane) to an elevated position as far as they can go. VGN is associated with high doses of alcohol and some drug categories for that individual. There is no known drug that will cause VGN without causing at least four clues of HGN.

Session Overview – Introduction to Drugged Driving

Resting Nystagmus



DWI DETECTION & SFST Intro-12

Slide 12.

Sometimes persons impaired by Dissociative Anesthetics will exhibit Resting Nystagmus, i.e., the eyes jerk while they are looking straight ahead.

Session Overview – Introduction to Drugged Driving

Horizontal Gaze Nystagmus



DWI DETECTION & SFST Intro-13

Slide 13.

HGN is defined as the involuntary jerking of the eyes as they gaze toward the side. (As defined in the current SFST curriculum.) Although this type of nystagmus is useful in determining alcohol influence, its presence may also indicate use of Central Nervous System (CNS) Depressants, Inhalants, and Dissociative Anesthetics (DID drugs). HGN becomes observable when a subject is impaired by alcohol, as the subject's BAC increases the jerking will appear sooner, and/or when a subject is impaired by DID drugs.

Session Overview – Introduction to Drugged Driving

Vertical Gaze Nystagmus



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Slide 14.

The VGN test is very simple to administer.

- Position the stimulus horizontally. Approximately 12-15 inches (30-38 cm) in front of the subject's nose
- Instruct the subject to hold their head still and follow the stimulus with the eyes only
- Raise the stimulus until the subject's eyes are elevated as far as possible, hold for a minimum of four seconds
- Watch closely for evidence of jerking (up and down).

VGN may be present in subjects under the influence of CNS Depressants, Dissociative Anesthetics, or Inhalants.

Session Overview – Introduction to Drugged Driving

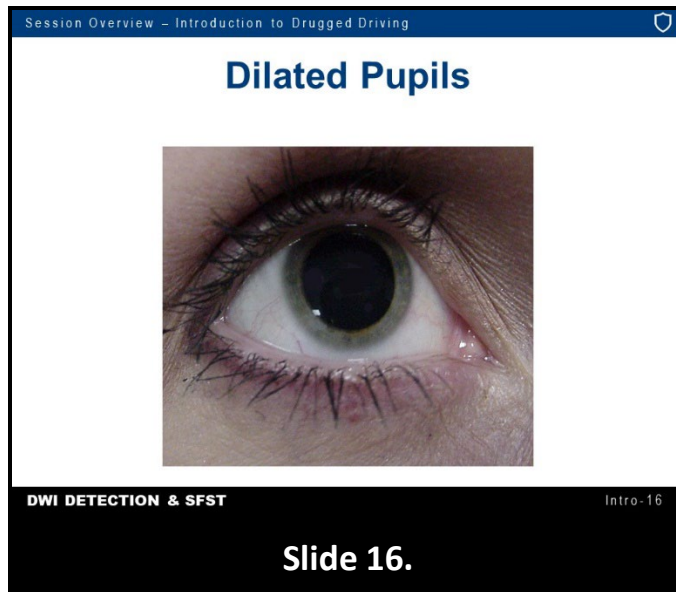
Pupil Size Observations



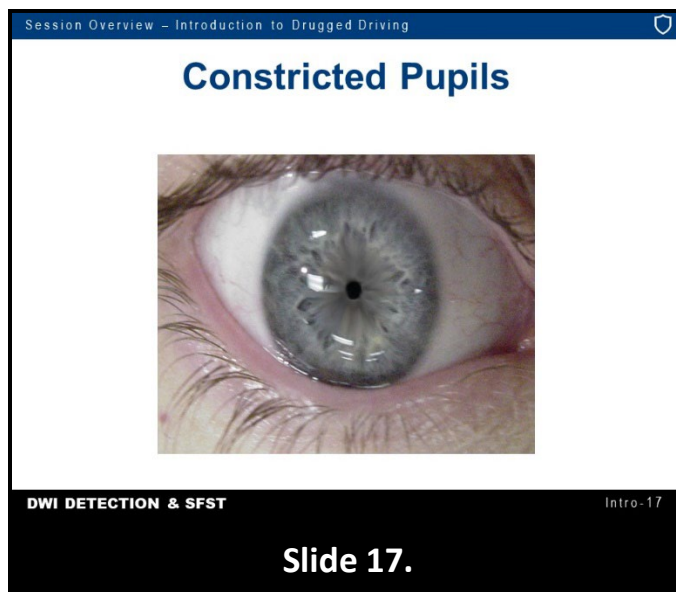
DWI DETECTION & SFST Intro-15

Slide 15.

The pupil is basically a circular hole in the middle of the iris, which regulates the amount of light that passes through into the retina. The pupils of the eyes continually adjust in size to accommodate different lighting conditions and refocus according to focal length. When placed in a darkened environment, the pupils will normally expand in size, or dilate, to allow the eyes to capture as much light as possible. When the lighting conditions are very bright, the pupils will normally shrink or constrict, to limit the amount of light that passes through and to keep the eyes from being over stimulated. The effects drugs have on the eyes are involuntary reactions, which mean they cannot be controlled by the subject.

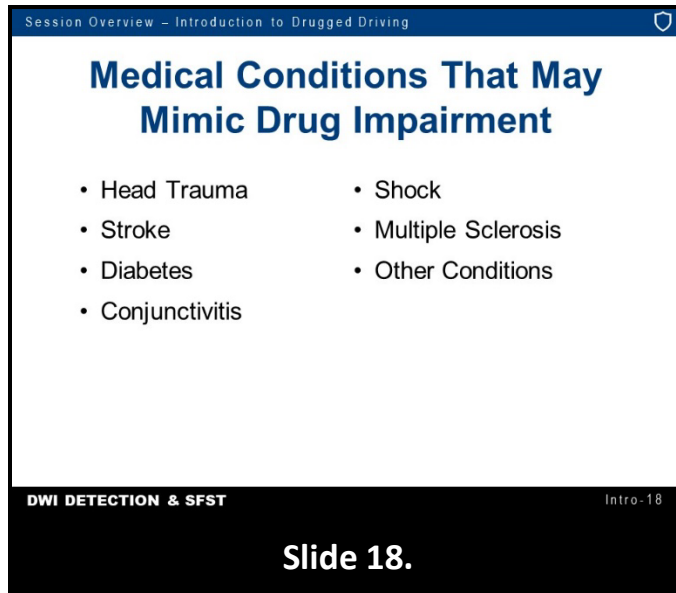


Dilated pupils are when the pupils appear larger than expected for the given lighting condition resulting in a noticeably larger opening (circle) in the center of the eye.



Constricted pupils are when pupils appear smaller than expected for the given lighting conditions, resulting in a noticeably smaller opening (circle) in the center of the eye.

C. Medical Conditions That May Mimic Drug Impairment

A presentation slide titled "Medical Conditions That May Mimic Drug Impairment". The slide has a blue header bar with the text "Session Overview - Introduction to Drugged Driving" and a shield icon. The main content area is white with a blue title. Below the title is a bulleted list of medical conditions. The slide has a black footer bar with the text "DWI DETECTION & SFST" and "Intro-18".

Session Overview - Introduction to Drugged Driving

Medical Conditions That May Mimic Drug Impairment

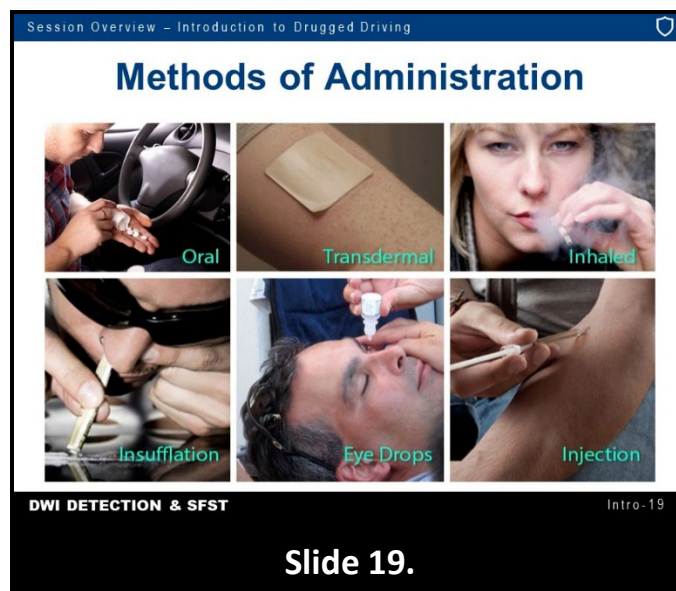
- Head Trauma
- Stroke
- Diabetes
- Conjunctivitis
- Shock
- Multiple Sclerosis
- Other Conditions

DWI DETECTION & SFST Intro-18

Slide 18.

There are various medical conditions and injuries that may cause subjects to appear to be impaired by alcohol and/or other drugs. Some of the more common medical conditions that may mimic drug impairment include: Head Trauma; Stroke; Diabetes; Conjunctivitis; Shock; Multiple Sclerosis; and, other conditions.

D. Drug Categories and Their Observable Effects



Oral - Oral administration is through the mouth.

Injection - Injection is a common method of administering drugs, such as heroin (narcotic analgesic). It is also used to introduce Stimulants, Hallucinogens, Dissociative Anesthetics, and other Narcotic Analgesics into the body. CNS Depressants can also be injected but this is not common due to the size of the needle required to deliver the substance.

In addition to injecting drugs into the veins in the arms, users will find more creative and less conspicuous areas on the body to administer a substance since needles typically leave marks which can be difficult to conceal.

Insufflation - Insufflation is the act of introducing a substance by inhaling through the nose for the purpose of intranasal absorption through the mucous membrane. For a substance to be effective when insufflated it must be in a water-soluble powder so it can be readily absorbed through the mucous membranes. This method is commonly referred to as “snorting”.

Inhalation - Inhalation is the act of introducing a substance directly into the respiratory system through the nose and mouth for the purpose of absorbing the substance through the alveoli in the lungs. This is a very rapid method of absorption and is often referred to as huffing, sniffing, or smoking.

Transdermal Absorption - Transdermal absorption is a less common method of administering drugs. Transdermal means the chemical or drug is absorbed into a subject's system through the skin.

Session Overview – Introduction to Drugged Driving

Drug Categories and Their Observable Effects

- CNS Depressants
- CNS Stimulants
- Hallucinogens
- Dissociative Anesthetics
- Narcotic Analgesics
- Inhalants
- Cannabis

DWI DETECTION & SFST Intro-20

Slide 20.

Definition of “Drug”: Any substance that, when taken into the human body, can impair the ability of the person to operate a vehicle safely. Within this simple, enforcement-oriented definition there are *seven categories of drugs*:

- CNS Depressants
 - CNS Stimulants
 - Hallucinogens
 - Dissociative Anesthetics
 - Narcotic Analgesics
 - Inhalants
 - Cannabis
-

Session Overview – Introduction to Drugged Driving

CNS Depressants

- Alcohol
- Barbiturates (Secobarbital)
- Non barbiturates (GHB/Soma)
- Anti-Anxiety Tranquilizers (Valium/Xanax)
- Antidepressants (Prozac/Elavil)
- Muscle relaxants



DWI DETECTION & SFST Intro-21

Slide 21.

CNS Depressants slow down the operations of the brain and usually depress the heartbeat, respiration, and many other processes controlled by the brain. The most familiar CNS Depressant is alcohol. Other CNS Depressants include:

- Barbiturates (such as Secobarbital (Seconal), and Pentobarbital (Luminal))
- Non-Barbiturates (GHB-gamma-hydroxybutyrate and Soma)
- Anti-Anxiety Tranquilizers (Such as Valium, Librium, Xanax, and Rohypnol)
- Antidepressants (such as Prozac and Elavil)
- Muscle relaxants and many other drugs (Soma)

CNS Depressants usually are taken orally, in the form of pills, capsules, liquids, etc. However, CNS Depressants may be injected or insufflated. In general, people under the influence of any CNS Depressant look and act like people under the influence of alcohol.

Session Overview – Introduction to Drugged Driving

Indicators of CNS Depressant Influence

- Drunk-like behavior
- Thick, slurred speech
- Uncoordinated



DWI DETECTION & SFST Intro-22

Slide 22.

General indicators of CNS Depressant influence are:

- Disoriented
- Drowsiness
- Drunk-like behavior
- Slow, sluggish reactions
- Thick, slurred speech
- Uncoordinated
- Unsteady walk

Eye indicators of CNS Depressant influence are:

- HGN usually will be present
 - VGN may be present (with high doses)
 - Pupil size usually will not be effected, except Methaqualone, Soma, and certain antidepressants may cause pupil dilation
-

Session Overview – Introduction to Drugged Driving

CNS Stimulants

- Cocaine
- Amphetamines
- Methamphetamine



DWI DETECTION & SFST Intro-23

Slide 23.

CNS Stimulants accelerate the heart rate, respiration, and many other processes of the body. The two most widely abused kinds of CNS Stimulants are Cocaine and methamphetamines. Cocaine is made from the leaves of the coca plant. Methamphetamines are chemically produced (manufactured) drugs. Cocaine abusers may take the drug by insufflation, smoking, (freebase, or “Crack”), injection, and/or orally. Abusers of amphetamines and methamphetamines may take their drugs by injection, orally, by insufflation, and/or smoked (methamphetamines only).

Session Overview – Introduction to Drugged Driving

Indicators of CNS Stimulant Influence

- Hyperactive
- Nervousness
- Talkative



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Slide 24.

People under the influence of CNS Stimulants tend to be hyperactive indicated by nervousness, talkativeness, and an inability to sit still. They also have difficulty concentrating for any length of time. General indicators of CNS Stimulant influence are:

- Anxiety
- Body tremors
- Euphoria
- Exaggerated reflexes
- Excited
- Grinding teeth (bruxism)
- Redness to nasal area
- Restlessness
- Talkative

Eye indicators of CNS Stimulant influence:

- Neither HGN nor VGN will be observed
- The pupils generally will be dilated

Session Overview – Introduction to Drugged Driving

Hallucinogens

- Peyote
- Salvia Divinorum
- LSD
- MDMA (Ecstasy)



DWI DETECTION & SFST Intro-25

Slide 25.

Hallucinogens are drugs that affect a person's perceptions, sensations, thinking, self-awareness, and emotions.

One common type of hallucination caused by these drugs is called synesthesia, which means a transposing of the senses. Sounds, for example, may be transposed into sights.

Sights, for example, may be transposed into odors or sounds.

Some hallucinogenic drugs come from natural sources. Peyote is a Hallucinogen found in a particular species of cactus. Psilocybin is a Hallucinogen found in a number of species of mushroom.

Other Hallucinogens are synthetically manufactured: Lysergic Acid Diethylamide (LSD); 3,4-Methylenedioxyamphetamine (MDA); 3,4-Methylenedioxymethamphetamine or Ecstasy (MDMA); and, many others.

Session Overview – Introduction to Drugged Driving

Indicators of Hallucinogen Influence

- Body tremors
- Dazed appearance
- Difficulty with speech
- Disoriented
- Hallucinations
- Nausea
- Paranoia
- Perspiring
- Piloerection (goose bumps)
- Uncoordinated

DWI DETECTION & SFST Intro-26

Slide 26.

Hallucinogen abusers usually take their drugs orally; however, some Hallucinogens can be smoked, injected or “snorted”. General indicators of Hallucinogen influence are:

- Body tremors
- Dazed appearance
- Difficulty with speech
- Disoriented
- Hallucinations
- Nausea
- Paranoia
- Perspiring
- Piloerection (goose bumps)
- Uncoordinated

Eye indicators of Hallucinogen influence:

- Neither HGN nor VGN should be present
- The pupils usually will be noticeably dilated

Session Overview – Introduction to Drugged Driving

Dissociative Anesthetics

- PCP
- Ketamine
- DXM



DWI DETECTION & SFST Intro-27

Slide 27.

Dissociative Anesthetics is the category of drugs that includes Phencyclidine (PCP), its various analogs, and Dextromethorphan (DXM). PCP is a synthetic drug first developed as an intravenous anesthetic.

Because PCP produces very undesirable side effects, it is no longer legally manufactured. Yet, an analog (chemical cousin) Ketamine is still being legally manufactured and available. However, it is easy to manufacture. The formula for making PCP and PCP analogs have been widely publicized. The manufacturing process involves readily available chemicals.

Many Dissociative Anesthetic users smoke the drug by using it to adulterate tobacco, marijuana, or various other substances. Dissociative Anesthetics can also be taken orally, by injection, or inhaled.

Session Overview – Introduction to Drugged Driving

Indicators of Dissociative Anesthetic Influence

- Blank stare
- Confused
- Incomplete verbal responses
- Muscle rigidity
- Perspiring
- Possibly violent and combative
- Repetitive speech
- Warm to touch



DWI DETECTION & SFST Intro-28

Slide 28.

General indicators of Dissociative Anesthetics are:

- Blank stare
- Confused
- Incomplete verbal responses
- Muscle rigidity
- Perspiring
- Possibly violent
- Slow, slurred speech

Eye Indicators of Dissociative Anesthetic influence:

- HGN generally will be present often with very early onset and very distinct jerking (Resting Nystagmus may be observed with high doses of dissociative anesthetics)
 - VGN generally will be present
 - Pupil Size usually will not be affected
-

Session Overview – Introduction to Drugged Driving

Narcotic Analgesics

- Heroin
- Morphine
- Codeine
- Synthetic Opiates (e.g., Methadone, Fentanyl)

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Slide 29.

Narcotic Analgesics include a large number of drugs that 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 drugs classified as Narcotic Analgesics are natural derivatives of opium, such as: Heroin; Morphine; Codeine; and, OxyContin. Some are synthetic Narcotic Analgesics, such as: Methadone; Demerol; and, Fentanyl.

Session Overview – Introduction to Drugged Driving

Indicators of Narcotic Analgesic Influence

- Depressed reflexes
- Droopy eyelids
- Dry mouth
- Itching
- “On the nod”
- Puncture marks may be evident
- Slow, low, raspy speech



DWI DETECTION & SFST Intro-30

Slide 30.

General indicators of Narcotic Analgesic influence:

- Depressed reflexes
- Droopy eyelids
- Drowsiness
- Dry mouth
- Itching
- “On the nod”
- Puncture marks may be evident
- Slow, low, raspy speech

Eye indicators of Narcotic Analgesic influence:

- Neither HGN nor VGN will be present
 - Pupils generally will be constricted
-

Session Overview – Introduction to Drugged Driving

Inhalants

- Various glues
- Paint
- Gasoline
- Aerosol sprays
- Nitrous Oxide
- Ether
- Amyl Nitrite



DWI DETECTION & SFST Intro-32

Slide 31.

Inhalants are breathable chemicals that produce mind-altering results. Inhalants include many familiar household materials such as glue (“Toluene”), paint, gasoline, aerosol sprays, etc. that produce volatile fumes.

Some drugs classified as Inhalants include: Various glues (e.g. Toluene); paint; gasoline; aerosol sprays (i.e., vegetable frying pan lubricants, hair sprays, insecticides); Nitrous Oxide; Ether; and, Amyl Nitrite.

Certain anesthetics also may be used as Inhalants.

Session Overview – Introduction to Drugged Driving

Indicators of Inhalant Influence

- Confused
- Disoriented
- Possible nausea
- Residue of substance
- Slow, thick, slurred speech



DWI DETECTION & SFST Intro-33

Slide 32.

General indicators of Inhalant influence:

- Confused
- Disoriented
- Possible nausea
- Residue of substance on face, hands, clothing
- Slow, thick, slurred speech

Eye indicators of Inhalant influence:

- HGN generally will be present
 - VGN may be present (especially with high doses)
 - Pupil size generally will not be affected
-

Session Overview – Introduction to Drugged Driving

Cannabis

- Marijuana
- Hashish
- Hash oil
- Synthetic Cannabinoids
- Other forms of Cannabis



DWI DETECTION & SFST Intro-34

Slide 33.

Cannabis is a category of drugs derived from various species of plants such as the Cannabis Sativa and Cannabis Indica.

Forms of Cannabis include: Marijuana; Hashish; Hash oil; and, Synthetic Cannabinoids which include Marinol or Dronabinol, Spice, K2, JWH-18, etc. Other forms of Cannabis include edibles, butane hash oils (wax), etc.

Cannabis products generally are smoked although they also can be administered orally.

Session Overview – Introduction to Drugged Driving

Indicators of Cannabis Influence

- Bloodshot eyes
- Body tremors
- Disoriented
- Odor of marijuana
- Relaxed inhibitions



DWI DETECTION & SFST Intro-35

Slide 34.

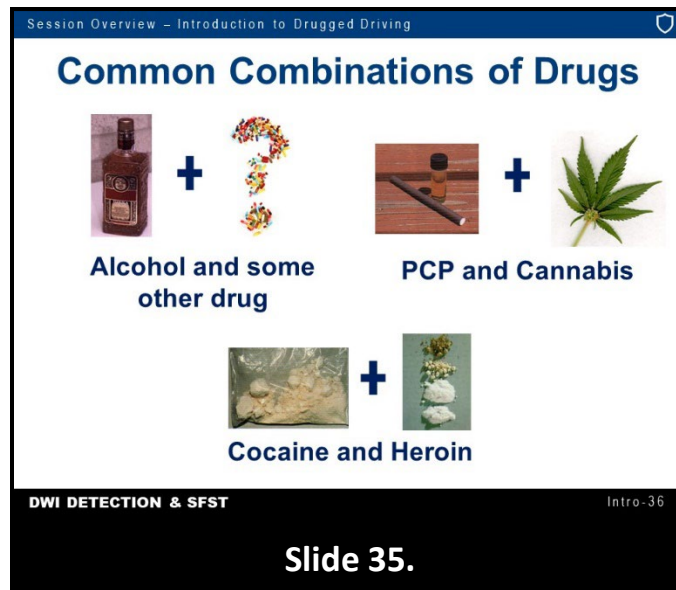
General Indicators of Cannabis Influence:

- Bloodshot eyes
- Body tremors
- Disoriented
- Odor of marijuana
- Relaxed inhibitions

Eye indicators of Cannabis Influence:

- Neither HGN nor VGN will be present
 - Pupil size generally will be dilated, but also may not be affected
-

E. Combinations of Drugs



According to the 2020 DRE Annual Report, 34 percent of DRE opinions recorded nationally involved impairment from the use of multiple drugs.

Alcohol and some other drug is the most frequent combination. PCP and Cannabis is another common combination. Cocaine and Heroin is another common combination.

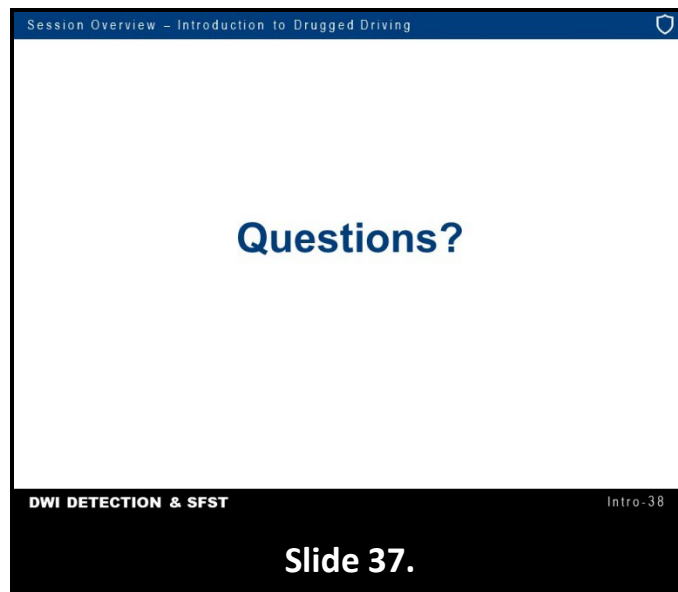
Because impairment from the use of multiple drugs is so common, you should not be surprised to encounter subjects who are under the influence of more than one drug. Be especially alert to the possibility subjects who have been drinking alcohol may also have administered some other drug or drugs. The effects of impairment from the use of multiple drugs may vary widely depending on exactly what combination of drugs is involved, how administered, and when they were administered. Multiple drug use can cause different effects in the user.

F. Dealing with Suspected Drug Influence or Medical Impairment



Officers should be familiar with the various medical conditions that mimic drug impairment, i.e. diabetic shock and hypoglycemia. Officers should obtain appropriate medical treatment for drivers who are impaired by these conditions.

Drivers who are suspected of drug impairment should be processed in accordance with state and local laws. Wherever possible, a local DRE should be summoned to assist with the investigation.



When drug impairment is suspected a DRE should be utilized to assist with documentation of the user's impairment. The DRE is trained to evaluate and interpret possible effects. Consult with a DRE, if possible and document in detail all observations. Although this training is not designed to qualify you as a DRE, it is intended to make you more knowledgeable when encountering drivers impaired by substances other than alcohol. For further information about drug-impaired driving, consider attending the Advanced Roadside Impaired Driving Enforcement training.

References

- 2020 National Survey on Drug Use and Health (NSDUH) Release. (2021, October). Retrieved from Substance Abuse and Mental Health Services Administration: <https://www.samhsa.gov/data/release/2020-national-survey-drug-use-and-health-nsduh-releases>
- Alcohol and the Driver. Council on Scientific Affairs. (1986, January 24-31). *JAMA*, 255(4), 522-527. doi:10.1001/jama.1986.03370040096031
- (1980). *Alcohol Highway Safety Workshop: Participant's Workbook Problem Status*. National Highway Traffic Safety Administration.
- Borkenstein, R. F. (1964, March). *The Role of the Drinking Driver in Traffic Accidents*. Bloomington, IN: Indiana University, Department of Police Administration.
- Burns, M., & Anderson, E. (1995, November). *A Colorado Validation Study of the Standardized Field Sobriety Test (SFST) Battery*. Colorado Department of Transportation.
- Burns, M., & Dioquino, T. (1997). *A Florida Validation Study of the Standardized Field Sobriety Test (SFST) Battery*. National Highway Traffic Safety Administration.
- Citek, K. (2014). *Eye Tests on a Suspect with a Blind Eye*. Pacific University College of Optometry.
- Citek, K., Ball, B., & Rutledge, D. A. (2003, November). Nystagmus Testing In Intoxicated Individuals. *Optometry*, 74(11), 695-710.
- (1974, August). *DWI Law Enforcement Training: Instructor Guide*. (P. 139). National Highway Traffic Safety Administration.
- Hause, J., Matheson, D., Hannon, R., & Chavez, E. (1977, January). *Increased D.U.I. Enforcement Program: Stockton, California Project Evaluation*. (Contract No. DOT-HS-5-01194). U.S. Department of Transportation/National Highway Traffic Safety Administration.
- Holland, M., & Ferner, R. (2017, July). A Systematic Review of the Evidence for Acute Tolerance to Alcohol - the "Mellanby Effect". *Clinical Toxicology (Philadelphia)*, 55(6), 545-556. doi:10.1080/15563650.2017.1296576
- (1999). *Horizontal Gaze Nystagmus: The Science and the Law: A Resource Guide for Judges, Prosecutors and Law Enforcement*. National Traffic Law Center. National Highway Traffic Safety Administration. Retrieved from https://www.nhtsa.gov/sites/nhtsa.gov/files/documents/horizontal_gaze_nystagmus-the_science_and_the_law.pdf
- Leigh, R., & Zee, D. (2015). *The Neurology of Eye Movements, Fifth Edition*. Oxford University Press.
- Mellanby, E. (1919). *Alcohol: Its Absorption Into and Disappearance from Blood Under Different Conditions*. London, HMSO: British Medical Research Committee: Special Report Series No. 31.

- National Center for Statistics and Analysis. (2016, June). *Motorcycles: 2014 Data*. (Traffic Safety Facts. Report No. DOT HS 812 292). Washington D.C.: National Highway Traffic Safety Administration.
- National Center for Statistics and Analysis. (2017, October). *Alcohol-Impaired Driving: 2016 Data*. (Traffic Safety Facts. Report No. DOT HS 812 450). Washington, D.C.: National Highway Traffic Safety Administration.
- National Center for Statistics and Analysis. (2022, April). *Traffic Safety Facts 2020: Alcohol-impaired driving: 2020 data*. (Report No. DOT HS 813 294). National Highway Traffic Safety Administration.
- National Center for Statistics and Analysis. (2022, October). *Traffic Safety Facts 2020: A Compilation of Motor Vehicle Crash Data*. (Report No. DOT HS 813 375). National Highway Traffic Safety Administration.
- National Institute on Alcohol Abuse and Alcoholism. (2017, April 19). *What Is A Standard Drink?* Retrieved from National Institute of Health: <https://www.niaaa.nih.gov/alcohols-effects-health/overview-alcohol-consumption/what-standard-drink>
- (1976, December). *Selective Traffic Enforcement Program – STEP-BAC (Blood Alcohol Content) in Fort Lauderdale, Florida*. (Report No. DOT HS 801 956), Fort Lauderdale, FL.
- Stuster, J. (1993). *The Detection of DWI Motorcyclists*. (Final Rep. DOT-HS-807-839). Santa Barbara, CA: Anacapa Sciences, Inc.
- Stuster, J. (1997). *The Detection of DWI at BACs Below 0.10*. (Final Rep. DOT-HS-808-654). Santa Barbara, CA: Anacapa Sciences, Inc.
- Stuster, J., & Burns, M. (1998, August). *Validation of the Standardized Field Sobriety Test Battery at BACs Below 0.10 Percent*. Santa Barbara, CA: Anacapa Sciences, Inc.
- Substance Abuse and Mental Health Services Administration. (2021). *Key Substance Use and Mental Health Indicators in the United States: Results from the 2020 National Survey on Drug Use and Health*. (HHS Publication No. PEP21-07-01-003, NSDUH Series H-56). Rockville, MD: Center for Behavioral Health Statistics and Quality, Substance Abuse and Mental Health Services Administration. Retrieved from <https://www.samhsa.gov/data/>
- (2013, March). *The Detection of DWI Motorcyclists*. (Publication: DOT HS 807 856). Washington, D.C.: National Highway Traffic Safety Administration.
- Watanabe, D., Wu, H., Noguchi, C., Zhou, Y., Akao, T., & Shimoi, H. (2011, February). Enhancement of the Initial Rate of Ethanol Fermentation Due to Dysfunction of Yeast Stress Response Components Msn2p and/or Msn4p. *American Society of Microbiology (ASM): Applied and Environmental Microbiology*, 77(3).
doi:<https://doi.org/10.1128/AEM.01869-10>