
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.

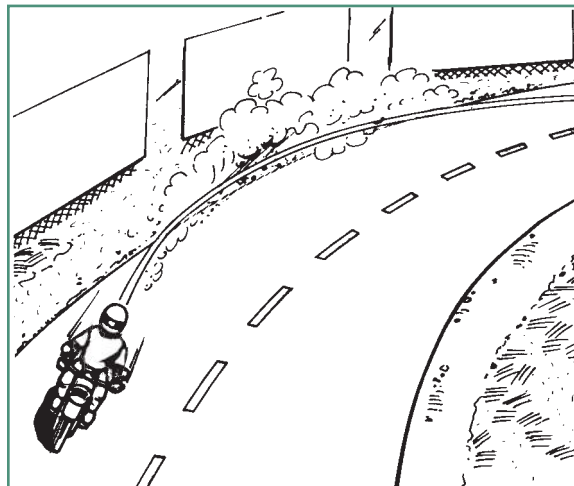
The cues described and illustrated in this brochure (and on a training video) are the behaviors that are most likely to discriminate between impaired and normal operation of a motorcycle. Cases that involve speeding, however, require additional clarification. Motorcyclists stopped for excessive speed 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

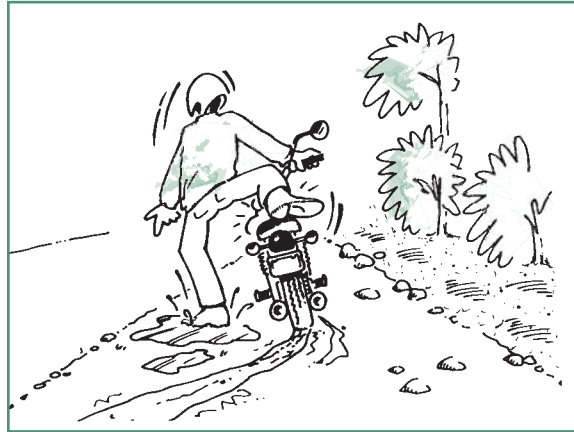
Earlier studies have shown that the most common cause of single-vehicle, fatal motorcycle crashes is the failure to negotiate curves, with the motorcycle continuing in a straight line until it strikes a stationary object. This type of crash is usually caused by alcohol-impaired balance and coordination. 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

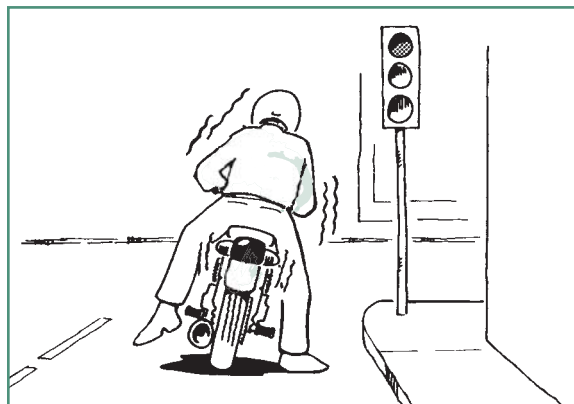
operator must decide upon a safe place to stop the bike. Problems with any step in this sequence can be evidence of alcohol impairment.



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

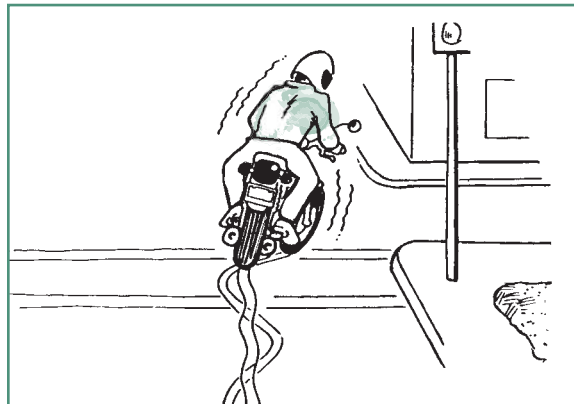
One typical practice for motorcycle riders at a stop is for the motorcyclist to place one foot on the ground to keep the bike upright, while leaving the other foot



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.

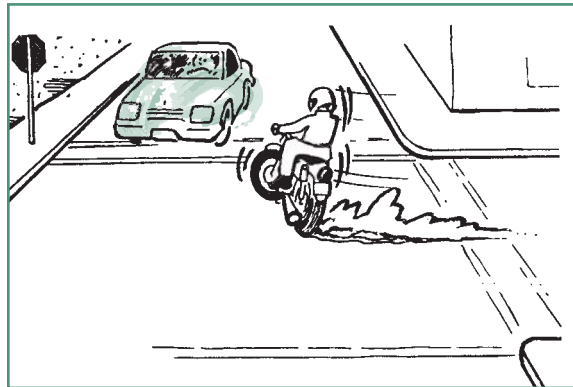
Turning Problems

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

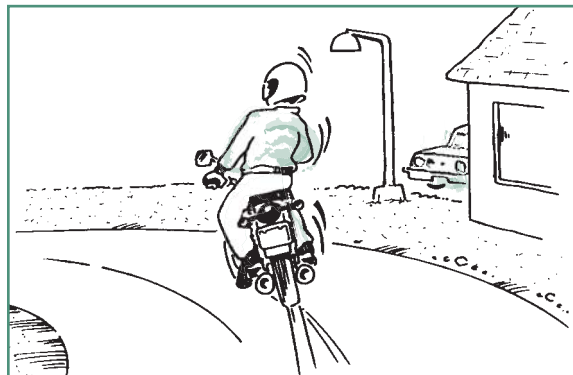


- **Unsteady During Turn or Curve.** The gyroscopic effects of a motorcycle's wheels tend to keep a motorcycle "on track" as long as speed is maintained. As a motorcycle's speed decreases, the demands placed on the operator's balancing capabilities increases. As a result, an officer might observe a motorcycle's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

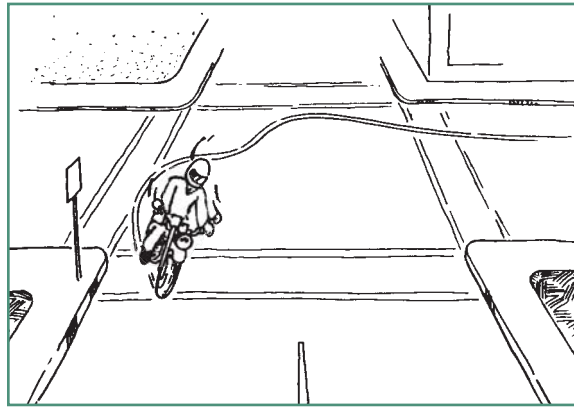
-
- **Late Braking During Turn.** The next turning problem is “late braking during a turn or on a curve.” A motorcyclist normally brakes prior to entering a turn or curve, so the motorcycle can accelerate through the maneuver for maximum control. An impaired motorcyclist might misjudge the speed or distance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

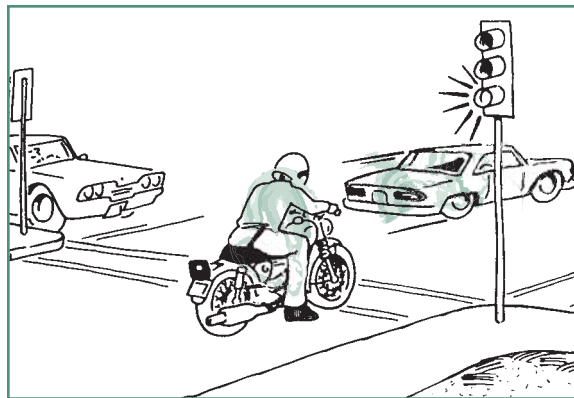


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- **Erratic Movements During Turn.** The fourth turning problem is “erratic movements.” These are defined as an inconsistent action or a sudden correction of a motorcycle maneuver during a turn or curve that can also indicate impaired driving. If you 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.

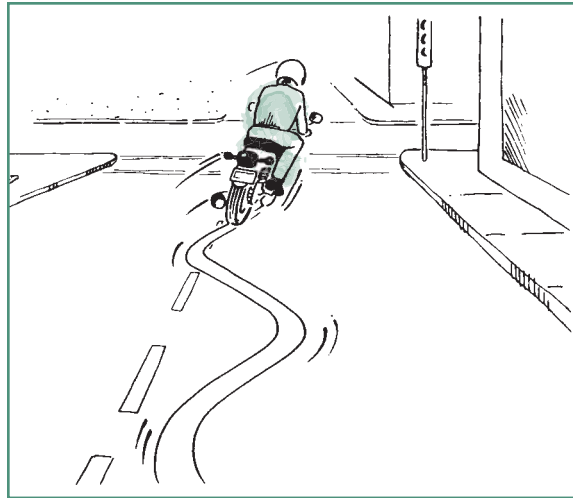
If you observe a motorcyclist to be inattentive to the surroundings, there is a better than average chance that the motorcyclist is a DWI violator.

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

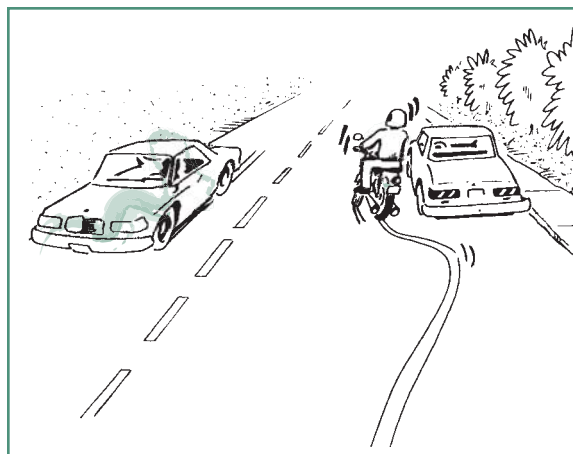
You are probably familiar with weaving as a predictor of DWI. If you see an automobile weaving there is a better than average chance the driver has exceeded the legal alcohol limits, but if you observe a motorcycle to be weaving, the probability of DWI is



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

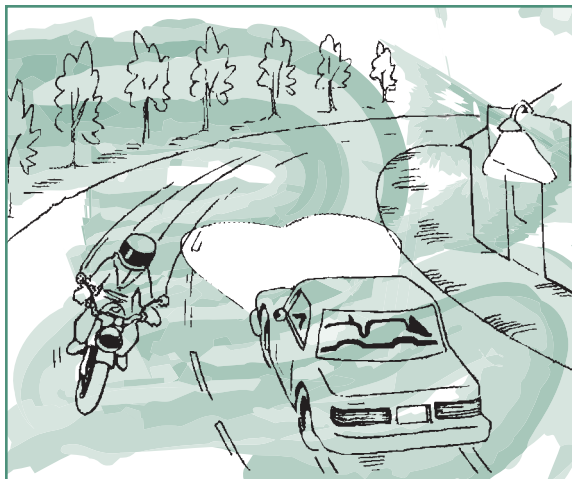
If you observe a motorcyclist making erratic movements or sudden corrections while attempting to ride in a straight line, study results indicated there is



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.



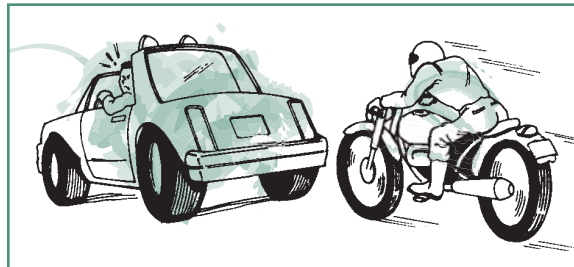
Recklessness

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.



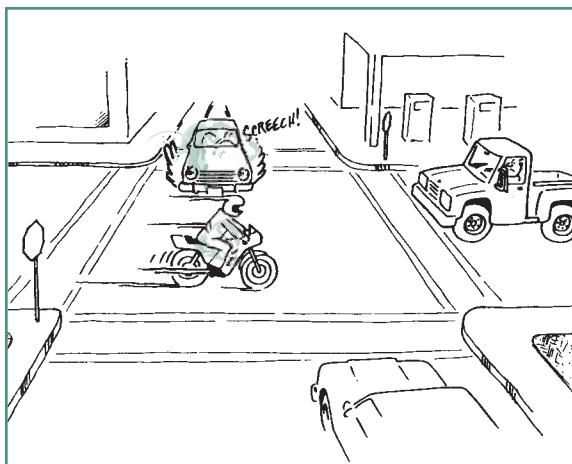
Following Too Closely

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.



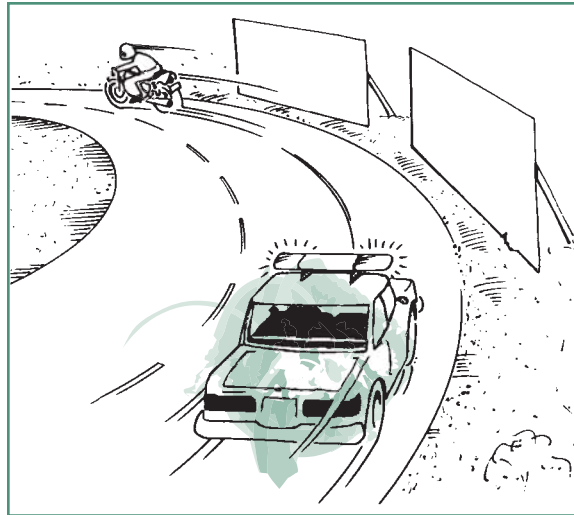
Running Stop Light or Sign

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.



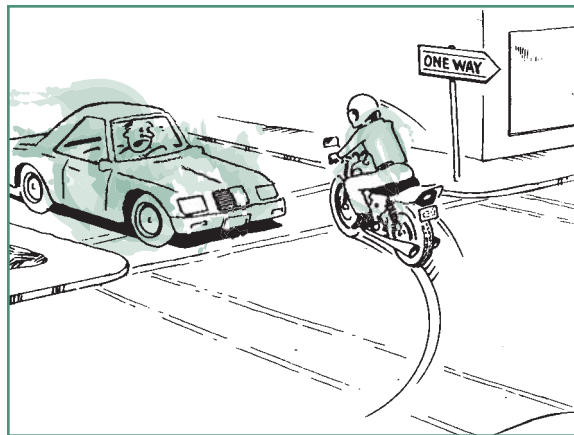
Evasion

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**



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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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LEARNING ACTIVITIES

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

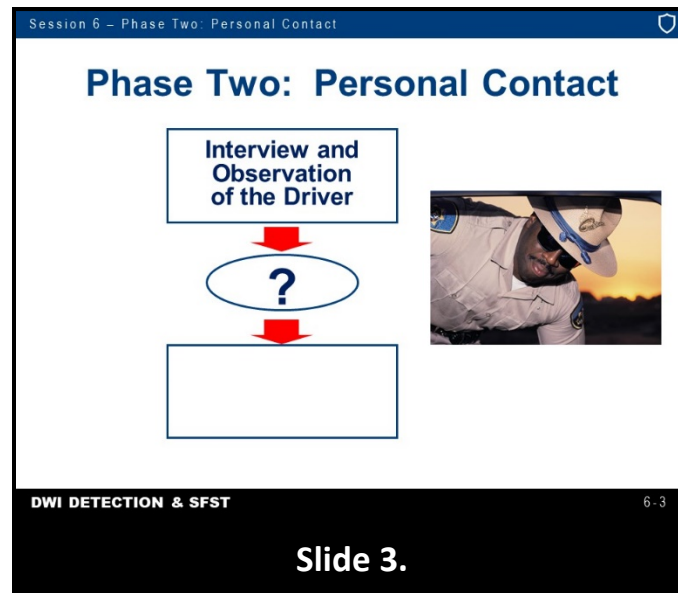


Learning Objectives

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



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

Interview and
Observation
of the Driver


↓

Should
Driver
Exit?

?

↓

Observation of
the Exit



DWI DETECTION & SFST6-4

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



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

Requires the ability to:

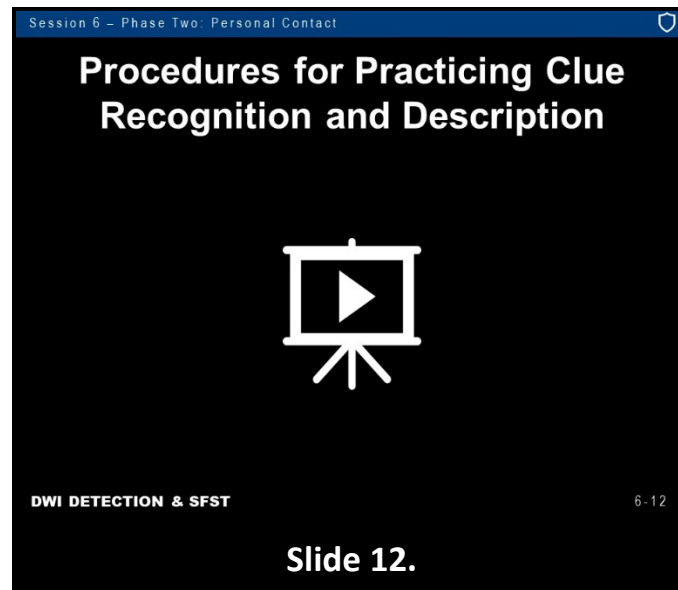
- Recognize the sensory evidence of alcohol and/or other drug influence
- Describe that evidence clearly and convincingly

Slide 11.

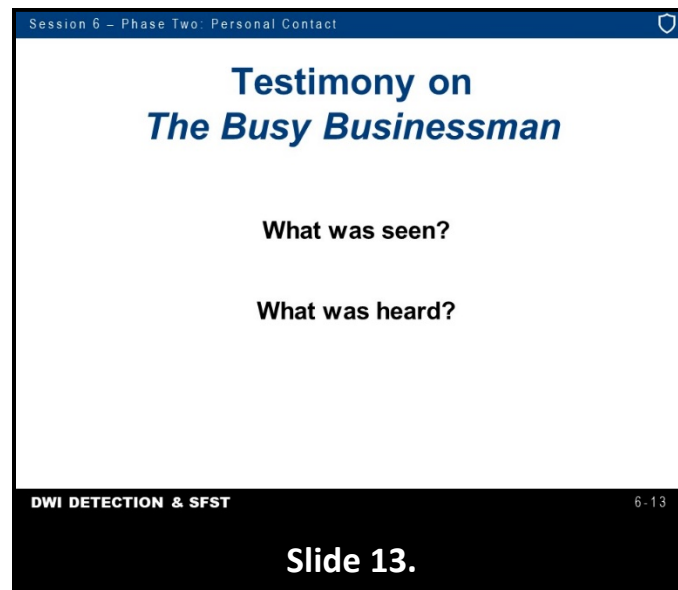
Proper face-to-face observation and interview of the driver demands two distinct but related abilities; The ability to recognize the sensory evidence of alcohol and/or other drug influence; and the ability to describe that evidence clearly and convincingly. Developing these abilities requires practice.

C. Recognition and Description of Investigation Clues

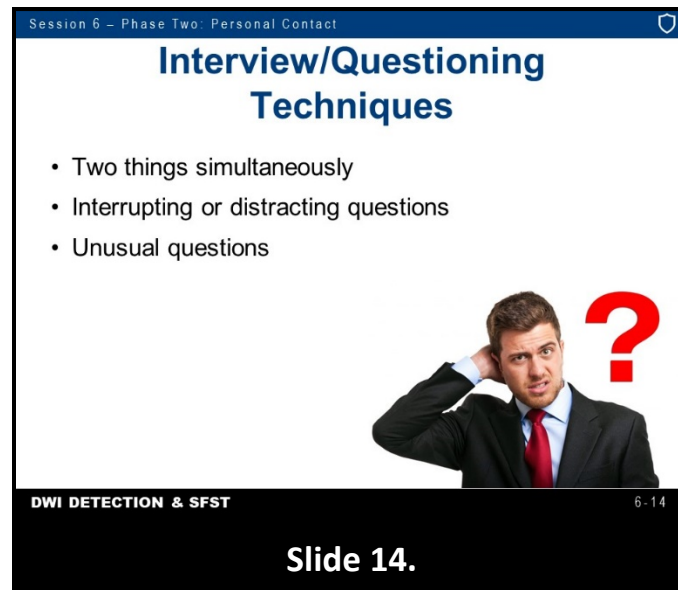
A basic purpose of the face-to-face observation and interview of the driver is to identify and gather evidence of alcohol and/or other drug influence. This is the purpose of each task in each phase of DWI detection. During the face-to-face observation and interview stage, it is not necessary to gather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



Session 6 - Phase Two - Personal Contact

Interview/Questioning Techniques

- Two things simultaneously
- Interrupting or distracting questions
- Unusual questions

DWI DETECTION & SFST 6-14

Slide 14.

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

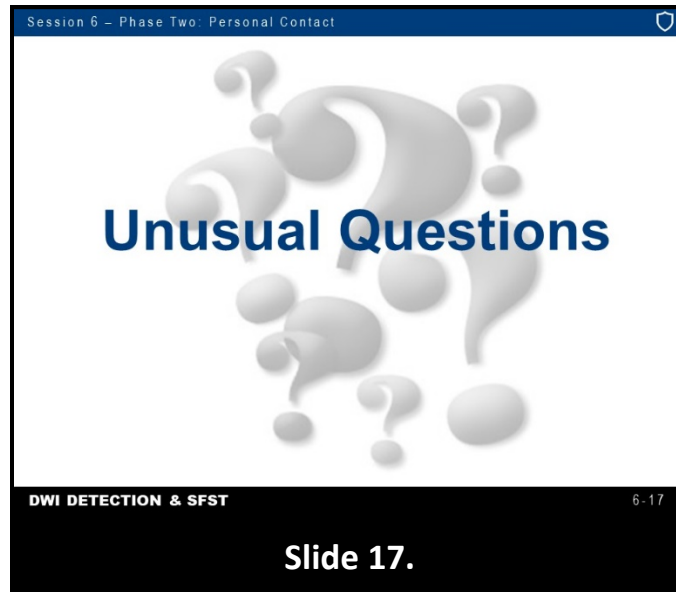
DWI DETECTION & SFST 6-16

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...

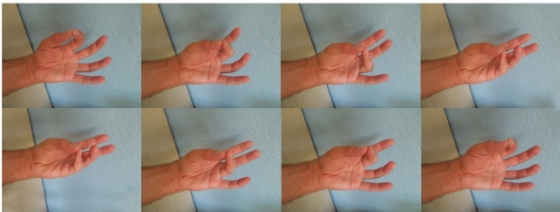
DWI DETECTION & SFST 6-20

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 & SFST 6-22

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:

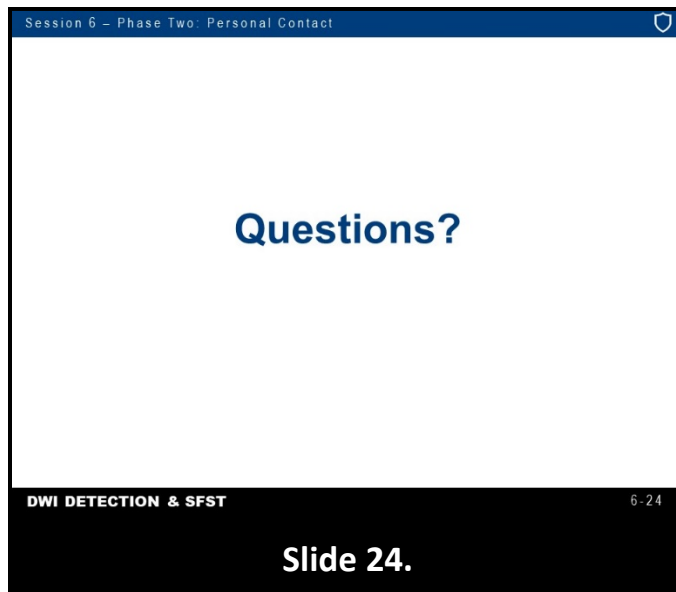
- Shows angry or unusual reactions
- Cannot follow instructions
- Cannot open the door
- Leaves the vehicle in gear
- Climbs out of vehicle
- Leans against vehicle
- Keeps hands on vehicle for balance

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.





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. _____

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. _____
-



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.

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. _____
-



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 _____

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

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LEARNING ACTIVITIES

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

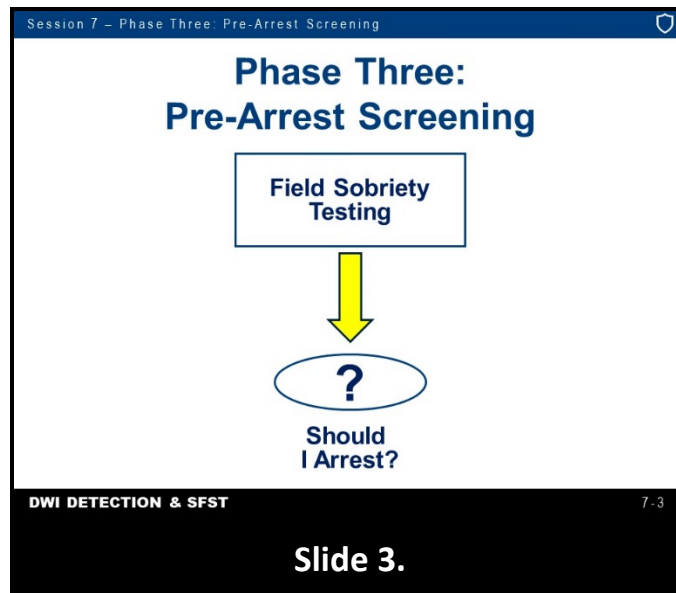


Learning Objectives

- 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



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.



The Arrest Decision

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



Slide 4.

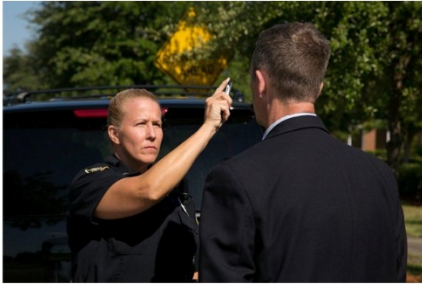
The DWI detection process concludes with the arrest decision. This decision is based on all of the evidence you have obtained during all three detection phases: on observation of the vehicle in motion and during the stopping sequence; on face-to-face observation of the subject and the subject's exit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

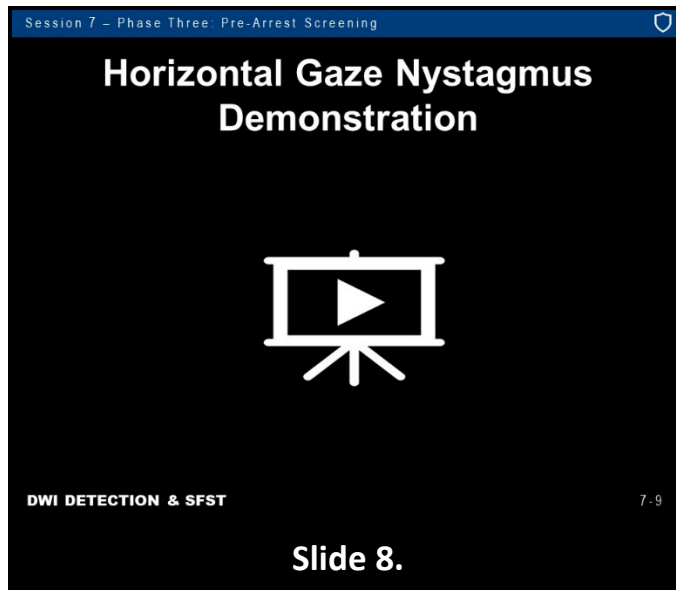
When the HGN test is administered, always begin with subject's left eye. Each eye is examined for three specific clues. As the eye moves from side to side, does it move smoothly, or does it jerk noticeably? As people become impaired by alcohol, their eyes exhibit a Lack of Smooth Pursuit as they move 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.

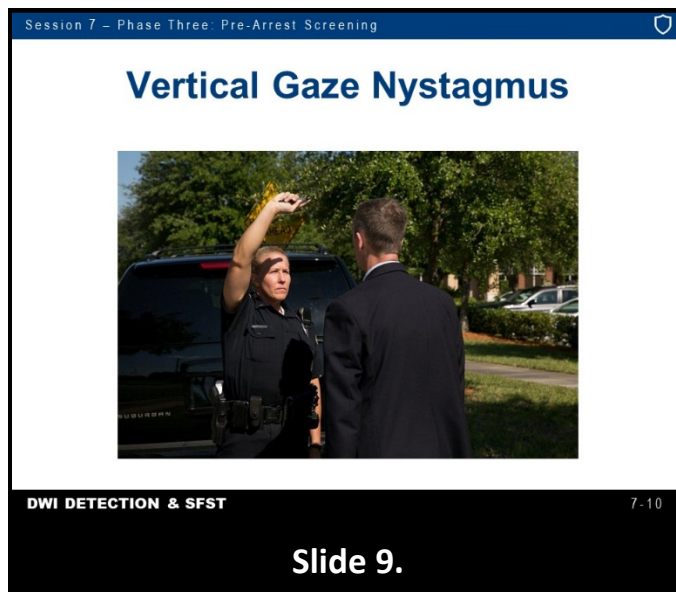
The stimulus may be the tip of a pen or penlight or the eraser on a pencil, which contrasts with the background.

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




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 7-11

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).



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

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 7-13

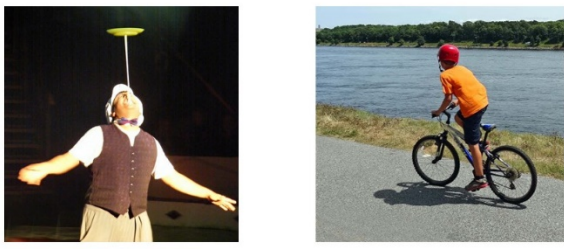
Slide 12.

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.



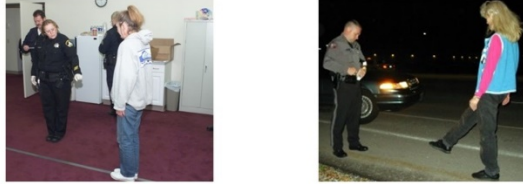
DWI DETECTION & SFST 7-14

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 7-15

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 7-16

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.



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

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 7-18

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 7-19

Slide 18.



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

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 7-21

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 7-22

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 & SFST 7-23

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 & SFST 7-24

Slide 23.



One Leg Stand Test Clues

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

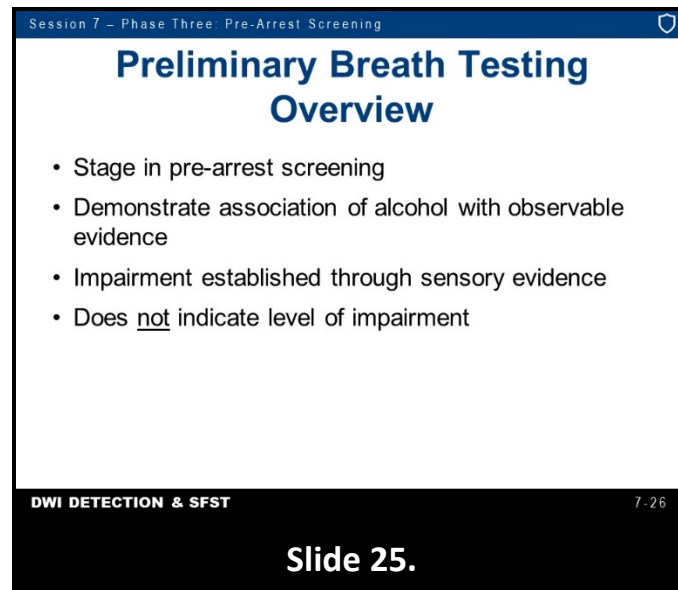
Slide 24.

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



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 7-26

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 7-27

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 7-28

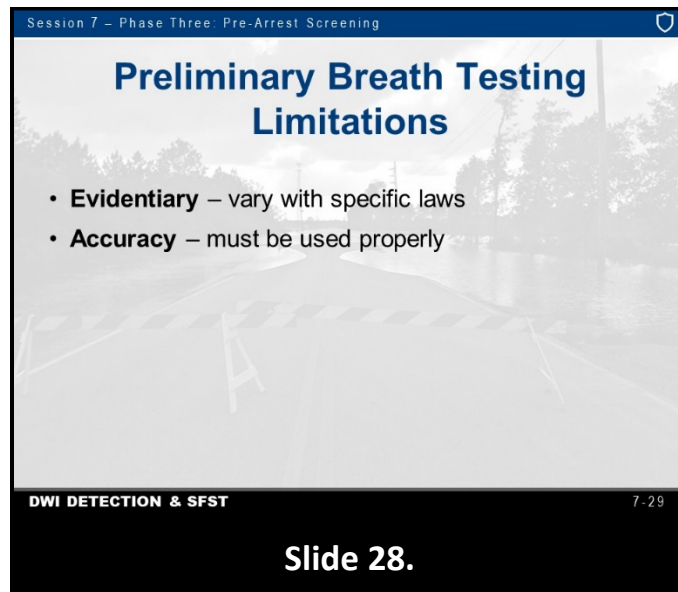
Slide 27.

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.



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 7-30

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.



Possible Factors Affecting Low Preliminary Breath Testing

- Breath sample cooling
- Breath sample composition



DWI DETECTION & SFST

7-31

Slide 30.

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

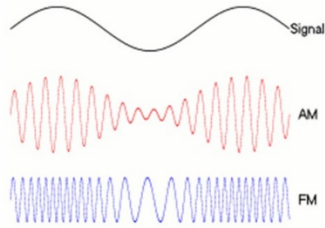
Breath Sample Cooling – If the captured breath sample is allowed to cool before it is analyzed, some of the alcohol vapor in the breath may turn to liquid and precipitate out of the sample. If that happens, the subsequent analysis of the breath sample will produce a low BAC result.

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.



Possible Factor Affecting Either High or Low Preliminary Breath Testing

Radio frequency interference



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.



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 _____

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 7-37

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 7-38

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



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



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 & SFST 8-4

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).

Session 8 – Concepts and Principles of the SFSTs

Original Research Objectives



DWI DETECTION & SFST 8-5


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.

Session 8 – Concepts and Principles of the SFSTs

Volunteers Were Subjected to Six Tests

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



DWI DETECTION & SFST 8-6

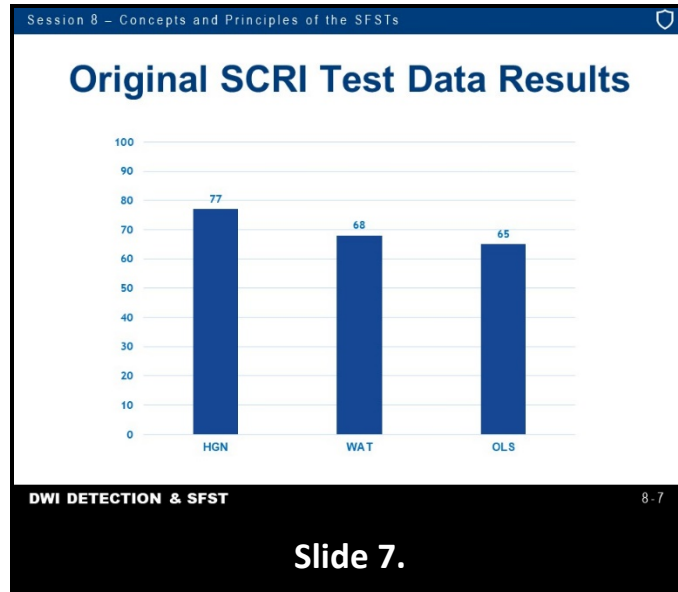
Slide 6.

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

Session 8 – Concepts and Principles of the SFSTs

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

Session 8 – Concepts and Principles of the SFSTs

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.



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

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.



SFST Field Validation Studies




Slide 11.

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

C.

Session 8 – Concepts and Principles of the SFSTs

“Correct” and “Incorrect” Arrest Decisions



DWI DETECTION & SFST 8-12

Slide 12.

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."



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

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.



Florida Field Validation Study of SFST

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

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.

Session 8 – Concepts and Principles of the SFSTs

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.

Session 8 – Concepts and Principles of the SFSTs

San Diego Field Validation Study of SFST

SFST	Accuracy (%)
HGN	88
WAT	79
OLS	83

DWI DETECTION & SFST 8-16

Slide 16.

- 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:

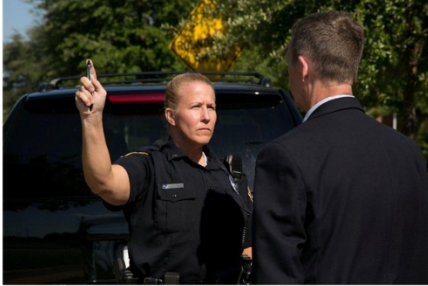
Stuster, J., & Burns, M. (1998, August). *Validation of the Standardized Field Sobriety Test Battery at BACs Below 0.10 Percent*. Santa Barbara, CA: Anacapa Sciences, Inc.

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

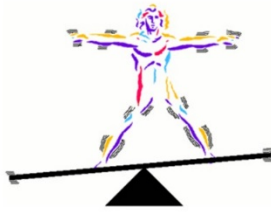
Slide 18.

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.

Session 8 – Concepts and Principles of the SFSTs

Vestibular Nystagmus

- Rotational
- Post Rotational
- Caloric
- Positional Alcohol Nystagmus



DWI DETECTION & SFST 8-19

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.

Session 8 – Concepts and Principles of the SFSTs

Neural Nystagmus

- Optokinetic
- Physiological
- Gaze

DWI DETECTION & SFST 8-20

Slide 20.

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.



Gaze Nystagmus

- Horizontal
- Vertical
- Resting




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.



Pathological Disorder Nystagmus

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

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

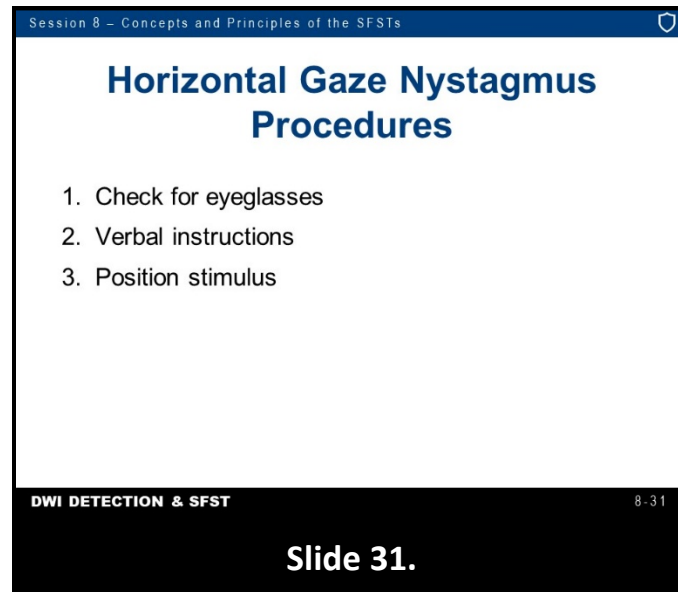
HGN and VGN can be observed directly and does not require special equipment. You will need a contrasting stimulus for the subject to follow with their eyes. This can be a penlight, pen, or similar object. The stimulus used should be held slightly above eye level, so the eyes are wide open when they look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



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

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.



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

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.

Session 8 – Concepts and Principles of the SFSTs

Clue Number 1

Lack of Smooth Pursuit



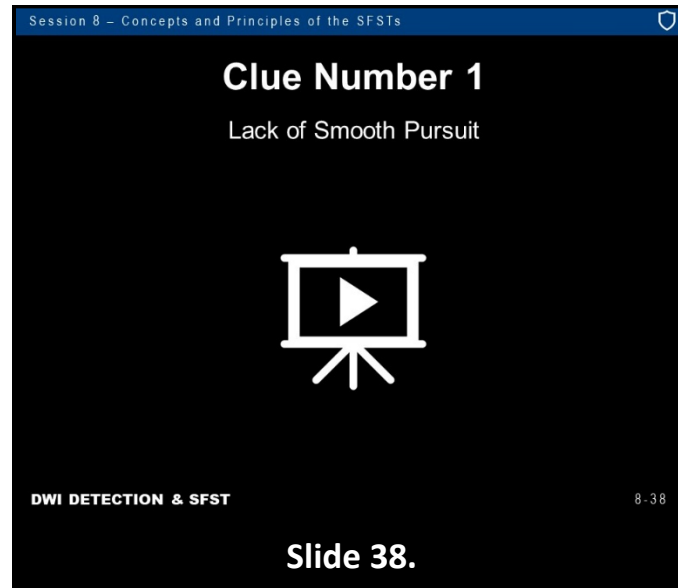
DWI DETECTION & SFST 8-37

Slide 37.

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).



Mechanics of Clue Number 1

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

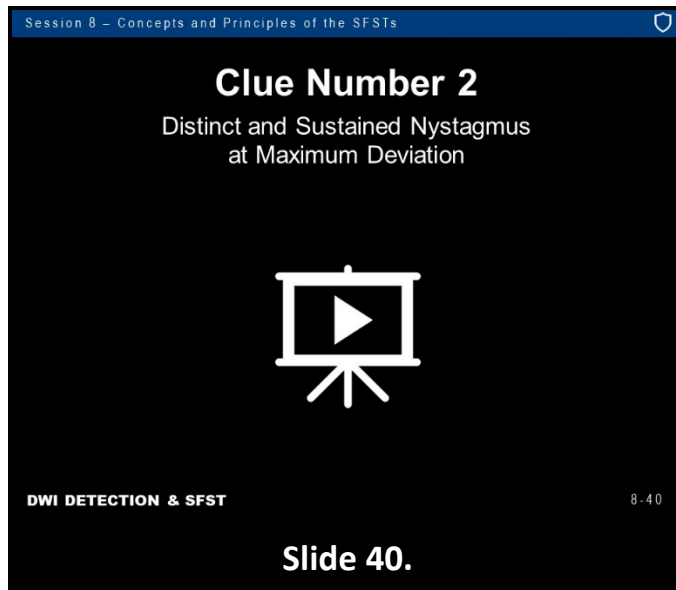
Slide 39.

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

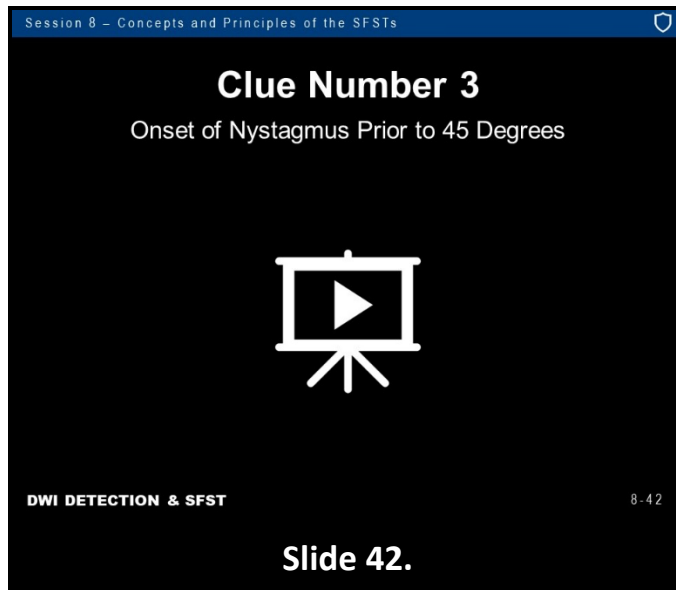
8-41

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.

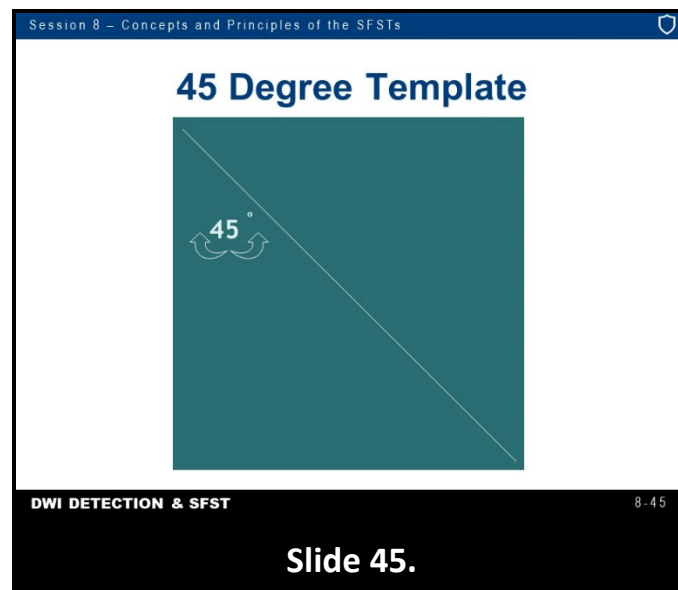
The stimulus is positioned approximately 12 - 15 inches from (30 - 38 cm) subject's nose and slightly above eye level. It is necessary to move the stimulus slowly to identify the point at which the eye begins to jerk.

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. If nystagmus is not observed prior to approximately 45 degrees, stop and hold the stimulus at an approximate 45-degree angle to verify the nystagmus is not present.



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.



Horizontal Gaze Nystagmus Test Criterion

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



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

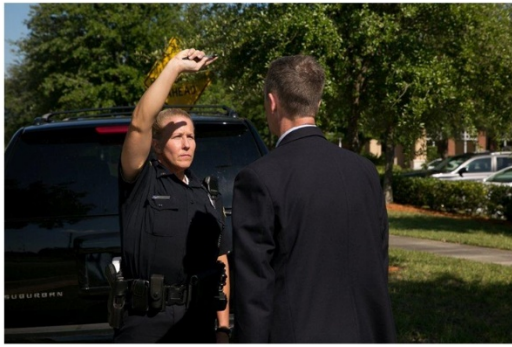
6. Lack of Smooth Pursuit
7. Distinct and Sustained Nystagmus as Maximum Deviation
8. Onset of Nystagmus Prior to 45 Degrees
9. Total the clues
10. Check for Vertical Nystagmus

Slide 48.

E. Vertical Gaze Nystagmus (VGN)

Session 8 – Concepts and Principles of the SFSTs

Vertical Gaze Nystagmus



DWI DETECTION & SFST 8-49

Slide 49.

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 & SFST 8-53

Slide 53.

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

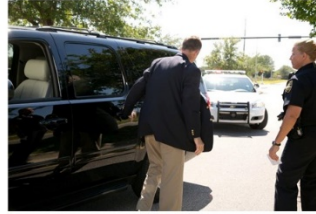
- When I tell you to start, take nine heel-to-toe steps on the line, turn, and take nine heel-to-toe steps down the line.
- When you turn, keep the front (lead) foot on the line, and turn by taking a series of small steps with the other foot, like this.
- While you are walking, keep your arms at your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



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.



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



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.



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 _____

Complete the check for VGN. If present, circle Y. If not present, circle N.

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

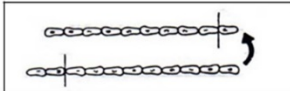
USES ARM(S) TO BALANCE

ACTUAL STEPS TAKEN

IMPROPER TURN (Describe) _____

CANNOT COMPLETE TEST (EXPLAIN) _____

OTHER: _____



FIRST NINE STEPS	SECOND NINE STEPS

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 (✓) 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.

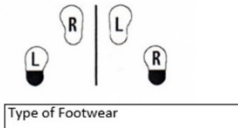
Session 8 – Concepts and Principles of the SFSTs

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.



Questions?

Slide 70.



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.

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.



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).

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

- The WAT test has _____ possible clues.
- During the _____ stage of the OLS test the subject must maintain balance while standing on one foot
- The OLS test requires the subject keep the foot raised for _____ seconds.

DWI DETECTION & SFST 8-73

Slide 73.

- The WAT test has _____ possible clues.
- During the _____ stage of the OLS test the subject must maintain balance for 30 seconds.
- The OLS requires the subject keep the foot elevated for _____ seconds.

Session 8 – Concepts and Principles of the SFSTs

Test Your Knowledge

- 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
- In the OLS test, a subject who sways has produced _____ clue(s)
- 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.

- 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.
- In the OLS test, a subject who sways has produced _____ clue(s).
- 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

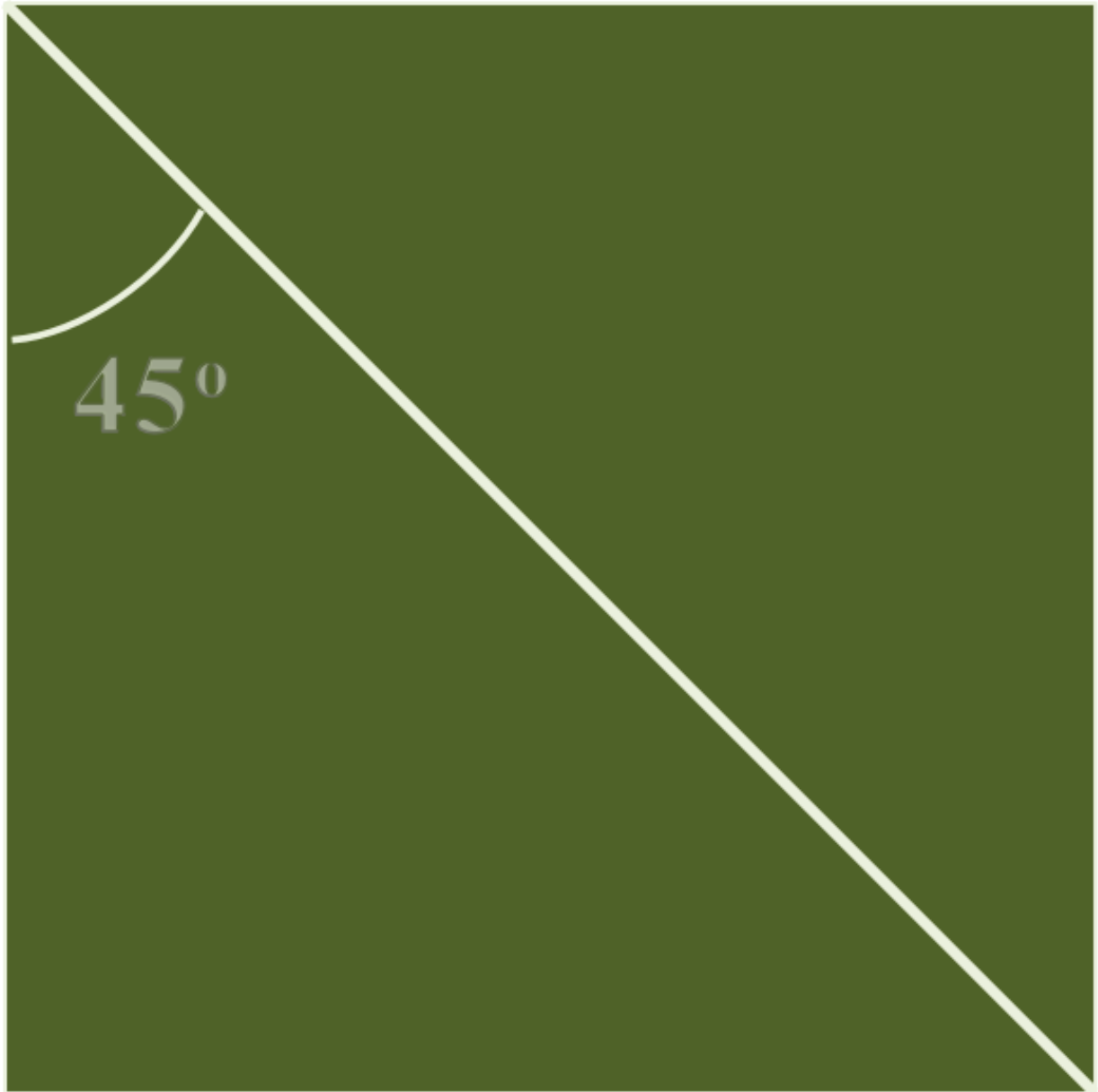
12. The maximum number of clues for HGN that can appear in one eye is _____.
13. Based upon the San Diego study, the HGN test can determine whether a subject's BAC is above 0.08, _____ % of the time.
14. The third clue of HGN is an Onset of Nystagmus Prior to _____ Degrees.

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

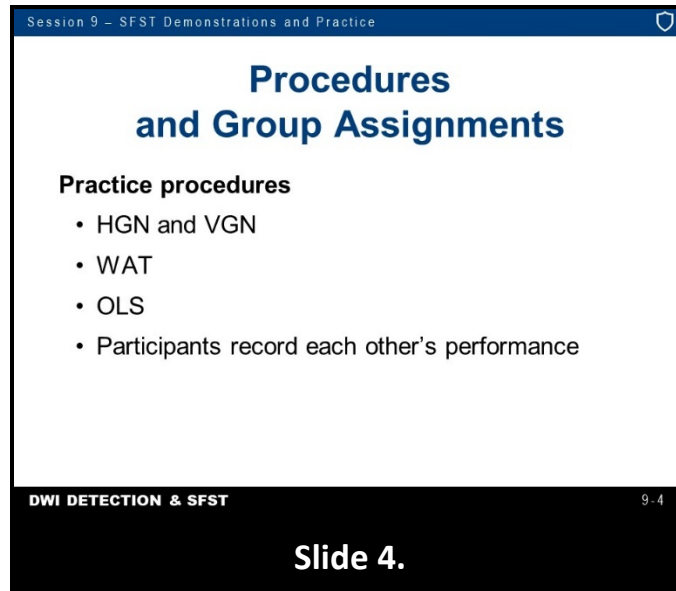
Three tests:

- 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. _____ 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. _____ Eye held at maximum deviation for a minimum of 4 seconds (no white showing).
Check left eye, then right eye. (Repeat)
8. _____ 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.

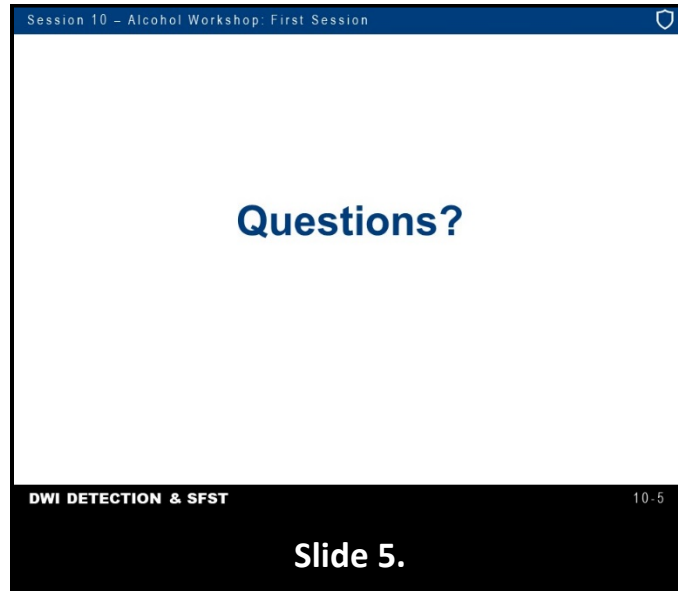
The SFST log is used to record the results of the SFSTs performed on suspected impaired subjects. The SFST log used in the course is located in the Participant Manual.

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

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.

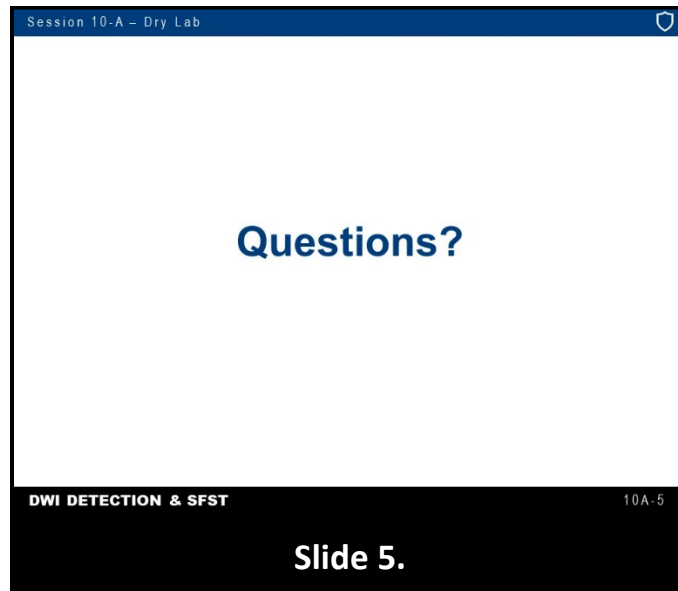
This log is important in documenting an officer's experience and proficiency in performing and interpreting SFSTs. It is highly recommended by the IACP and the National Highway Traffic Safety Administration (NHTSA), that officers utilize an SFST log for the following reasons:

- 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: <input type="checkbox"/> Equal <input type="checkbox"/> Unequal	Tracking: <input type="checkbox"/> Equal <input type="checkbox"/> Unequal	Unequal Pupil Size: Explain:
Resting Nystagmus <input type="checkbox"/> Yes <input type="checkbox"/> No	Eyelids: <input type="checkbox"/> Normal <input type="checkbox"/> Droopy	

Lack of Smooth Pursuit	Left Eye	Right Eye	Vertical Nystagmus <input type="checkbox"/> Yes <input type="checkbox"/> No
Distinct and Sustained Nystagmus at Maximum Deviation	Left Eye	Right Eye	Eyes: <input type="checkbox"/> Normal <input type="checkbox"/> Bloodshot <input type="checkbox"/> Watery
	Onset of Nystagmus Prior To 45 Degrees		

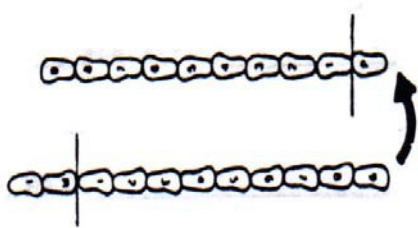
HGN CLUES

Observed	Actual

WALK AND TURN TEST Cannot keep balance _____ Starts too soon _____

1st Nine 2nd Nine

WALK AND TURN

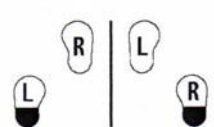


- Stops Walking
- Misses Heel-to-Toe
- Steps Off Line
- Uses Arms
- Actual Steps Taken

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 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	 Sways while balancing Uses arms to balance Hopping Puts foot down

ONE LEG STAND	
Observed	Actual

1 1

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



Slide 2.

Learning Objectives

- Discuss the essential elements of a DWI report
- Successfully complete a narrative arrest report
- Discuss the importance of trial preparation




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



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.
-