



NHTSA: STANDARDIZED FIELD SOBRIETY TESTS

BY: SHANNON A. JARVIS

ASSISTANT PUBLIC DEFENDER

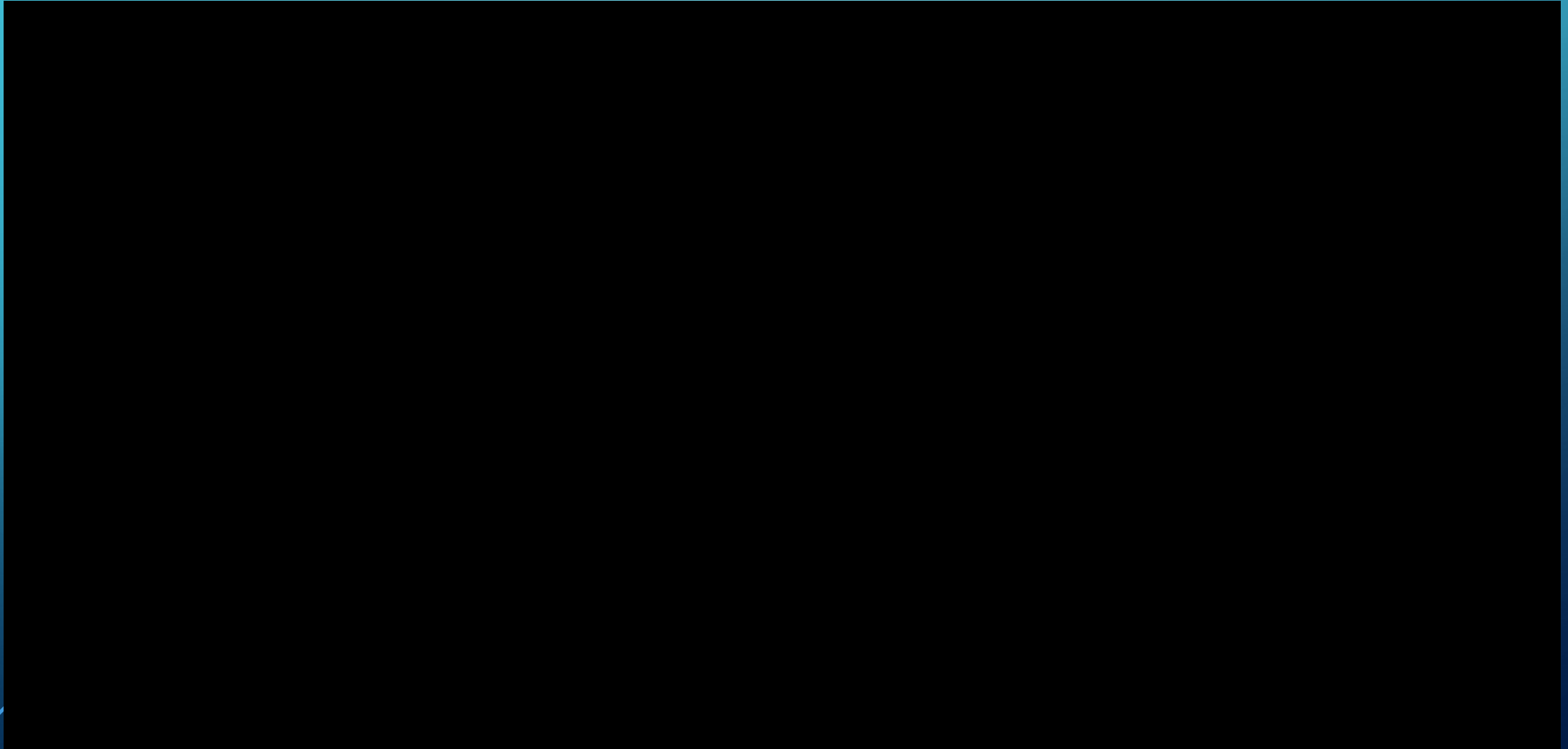
PITT COUNTY 3A

ACKNOWLEDGMENTS

- NCAJ
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- NHTSA Manuals
- DUI Defense Lawyer's Association (DUIDLA). Specifically Attorney Willis

EXAMPLE OF A DWI

[HTTPS://WWW.YOUTUBE.COM/WATCH?V=TXUXIYJUDC4](https://www.youtube.com/watch?v=TXUXIYJUDC4)



WHAT IS NHTSA?

- NHTSA stands for the National Highway Safety Traffic Administration. It is housed under the Department of Transportation.
 - <https://www.nhtsa.gov/>

NHTSA AND DRIVING WHILE IMPAIRED EFFECTS

Blood Alcohol Concentration (BAC)

Typical Effects

Predictable Effects on Driving

.02%

Some loss of judgment, relaxation, slight body warmth, altered mood

Decline in visual functions (rapid tracking of a moving target), decline in ability to perform two tasks at the same time (divided attention)

.05%

Exaggerated behavior, may have loss of small-muscle control (e.g., focusing your eyes), impaired judgment, usually good feeling, lowered alertness, release of inhibition

Reduced coordination, reduced ability to track moving objects, difficulty steering, reduced response to emergency driving situations

.08%

Muscle coordination becomes poor (e.g., balance, speech, vision, reaction time, and hearing), harder to detect danger, judgment, self-control, reasoning, and memory are impaired

Concentration, short-term memory loss, speed control, reduced information processing capability (e.g., signal detection, visual search), impaired perception

.10%

Clear deterioration of reaction time and control, slurred speech, poor coordination, and slowed thinking

Reduced ability to maintain lane position and brake appropriately

.15%

Far less muscle control than normal, vomiting may occur (unless this level is reached slowly or a person has developed a tolerance for alcohol), major loss of balance

Substantial impairment in vehicle control, attention to driving task, and in necessary visual and auditory information processing

NHTSA MANUALS

DWI Detection and Standardized Field Sobriety Testing

- This manual is used by every officer to train on how to do complete SFSTs.
- NOTE: No officer is “certified” in SFSTs. They may have received a certificate – but cannot say they are certified.

NHTSA MANUALS (CONT)

Advanced Roadside Impaired Driving Enforcement (A.R.I.D.E)

- This manual is used by every officer to train as a refresher for SFSTs and more advanced drug related impairment.
 - NOTE: Officers who take A.R.I.D.E. are not Drug Recognition Experts (DREs)

3 MAJOR STANDARDIZED FIELD SOBRIETY TESTS

- Horizontal Gaze Nystagmus
- Walk and Turn
- One Leg Stand

OTHER FIELD SOBRIETY TESTS

- Alphabet – Requires the subject to recite part of alphabet. Subject must begin with any letter other than A and end on a letter other than Z. Ex. H through V.
- Count Down – Count backwards. Ex. Start at 68 and end with 53. (Never using numbers that end with 5 or 0.)

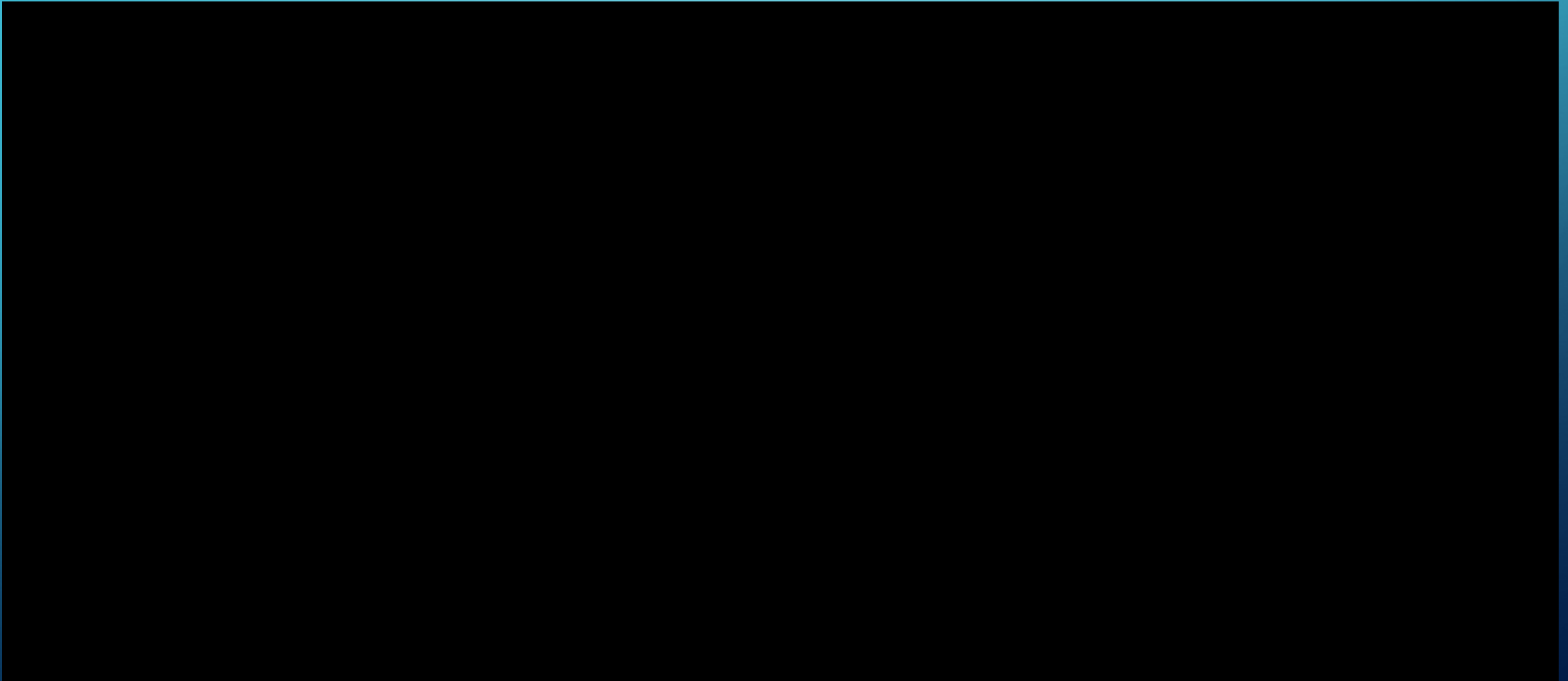
OTHER FIELD SOBRIETY TESTS (CONT)

- Finger Count – Ask the subject to touch the tip of the thumb to the tip of each finger on same hand while simultaneously counting up one, two, three, four, then reverse direction counting down.
 - NOTE: These test are not standardized and are not scientifically reliable as they were not included in the studies.

EXAMPLE OF OTHER FIELD SOBRIETY TESTS

[HTTPS://WWW.YOUTUBE.COM/WATCH?V=WWLLWGTXZH](https://www.youtube.com/watch?v=WWLLWGTXZH)

W



INSIDE THE NHTSA MANUALS HORIZONTAL GAZE NYSTAGMUS (HGN)

- “Nystagmus” mean an involuntary jerking of the eyes.
- Deemed the most reliable field sobriety test.
- HGN test always begins with subject’s LEFT eye.
- Maximum number of clues is six. Only three clues can appear in each eye.
- Original research by Southern California Research Institute (SCRI) showed the test was 77% accurate at detecting a BAC of 0.10 or above.

LET'S TALK STATISTICS A MINUTE

Accuracy of NHTSA Studies

- 76% accurate – 1977 Study.
- 81% accurate – 1981 Study.
- 93% accurate – Colorado Study.
- 95% accurate – Florida Study.
- 91% accurate – San Diego Study.

THAT IS FUNNY BECAUSE IT IS COMPLICATED BS.

NHTSA LAB STUDIES

What does NHTSA say about the accuracy?

- The HGN is 77% accurate.
- The Walk and Turn is 68% accurate.
- The One Leg Stand is 65% accurate.

NHTSA LAB STUDIES – NOT IN THE MANUAL

- All these “studies” were done in a lab.
- Healthy volunteers that were screened.
- Most volunteers men under 40.
- Not nervous about going to jail or getting hit by a passing car.
- Controlled environment. Good lighting, flat surface.
- No slope, no gravel, no traffic, no wind, no noise, no weather.



ALWAYS REMEMBER!

“In God we trust, all others must bring data.”

False positives are far more likely than false negatives while using SFSTs.



FYI – WHAT IS NOT IN NHTSA

- SFSTs have never been correlated with driving impairment.
- SFSTs have never been studied to determine accuracy of predicting impairment.
- SFSTs have never been studied to determine accuracy as it relates to any drug impairment.

MORE NHTSA “STUDIES”

- • 76% accurate – 1977 Study.
- • 81% accurate – 1981 Study.
- • 93% accurate – Colorado Study.
- • 95% accurate – Florida Study.
- • 91% accurate – San Diego Study.

1977 STUDY

- 238 subjects
- 101 arrests
- Scientific Method Used

47% of the 101 arrestees were not intoxicated.

1981 STUDY

- 296 subjects
- 118 arrests
- Scientific Method Used
 - **32% of the 118 arrestees were not intoxicated.**
 - 18% of the subjects who had no alcohol in their system were impaired according to the officers.
 - Note: This study “improved” the rate of arrest as subjects were “super dosed.”

SUPER DOSING

- **78 percent** of the subjects were dosed with either high BACs (about 0.15—super-dosed or walking puddle) or low BACs (0.05 and below).
- It was much easier for officers to score an individual as being above a 0.10 BAC when they were dosed at 0.15 BAC and above.
- Only 22 percent of the subjects in the 1981 study were in the more difficult to determine range of between 0.05 to 0.15 BAC.

GOOD-AUGSBERGER STUDY

- 92% of subjects exhibiting four or more clues on the HGN registered BACs above 0.10. (Ohio State Highway Patrol data.)

However, **81.5%** of those with BACs under 0.10 also exhibited four or more clues. Although overlooked in the body of the article - this information is included in the charts!

TRUTH IN THE NUMBERS?

The reason so many people with BAC levels of 0.08 and above may exhibit four or more clues during the HGN test is because MANY people begin to exhibit these same clues when their BAC levels are below 0.08.

1995 STUDY (COLORADO)

- According to NHTSA SFSTs have an accuracy rate of 93%.
- The average BAC in the Colorado study was 0.152.
- 1 in 8 participants with BACs under 0.05 exhibited 4 or more HGN clues.
- Scientific Method Not Used. Not Peer Reviewed.

1997 STUDY (FLORIDA)

- According to NHTSA, SFSTs have an accuracy rate of 95%.
- The average BAC of those correctly arrested was 0.15.
- At least 32% of sober people failed the OLS.
- 76% of sober motorists failed the WAT with two or more clues.
- 18% of the subjects with BACs below 0.08 exhibited 5 or 6 HGN clues.
- 67% of the subjects who were incorrectly arrested (under 0.08) exhibited all 6 HGN clues.
- Scientific Method Not Used. Not Peer Reviewed.

1998 STUDY (SAN DIEGO)

According to NHTSA SFSTs have an accuracy rate of 91%.

- Decision to arrest on HGN alone = 37% incorrect.
- Decision to arrest on WAT alone = 52% incorrect.
- Decision to arrest on OLS alone = 41% incorrect.

1998 STUDY (SAN DIEGO)

- Average BAC of those correctly arrested was 0.15.
- 28% of participants with BACs under 0.08 were arrested.
- Utilized an Alcosensor.
- Scientific Method Not Used. Not Peer Reviewed.

HOW TO CONDUCT HGN?

- Subject is instructed to stand with feet together, hands by side, hold the head still, and follow the motion of the stimulus with eyes only
- Object may be tip of pen, penlight, pencil, which contrasts with the background.
- Each eyes is checked, beginning with the subject's left eye.
- Two or more passes are made before each eye to look for clues.
- Height may restrict ability to clearly see nystagmus, may place be placed in seated position to accommodate a better view.

VERTICAL GAZE NYSTAGMUS (VGN)

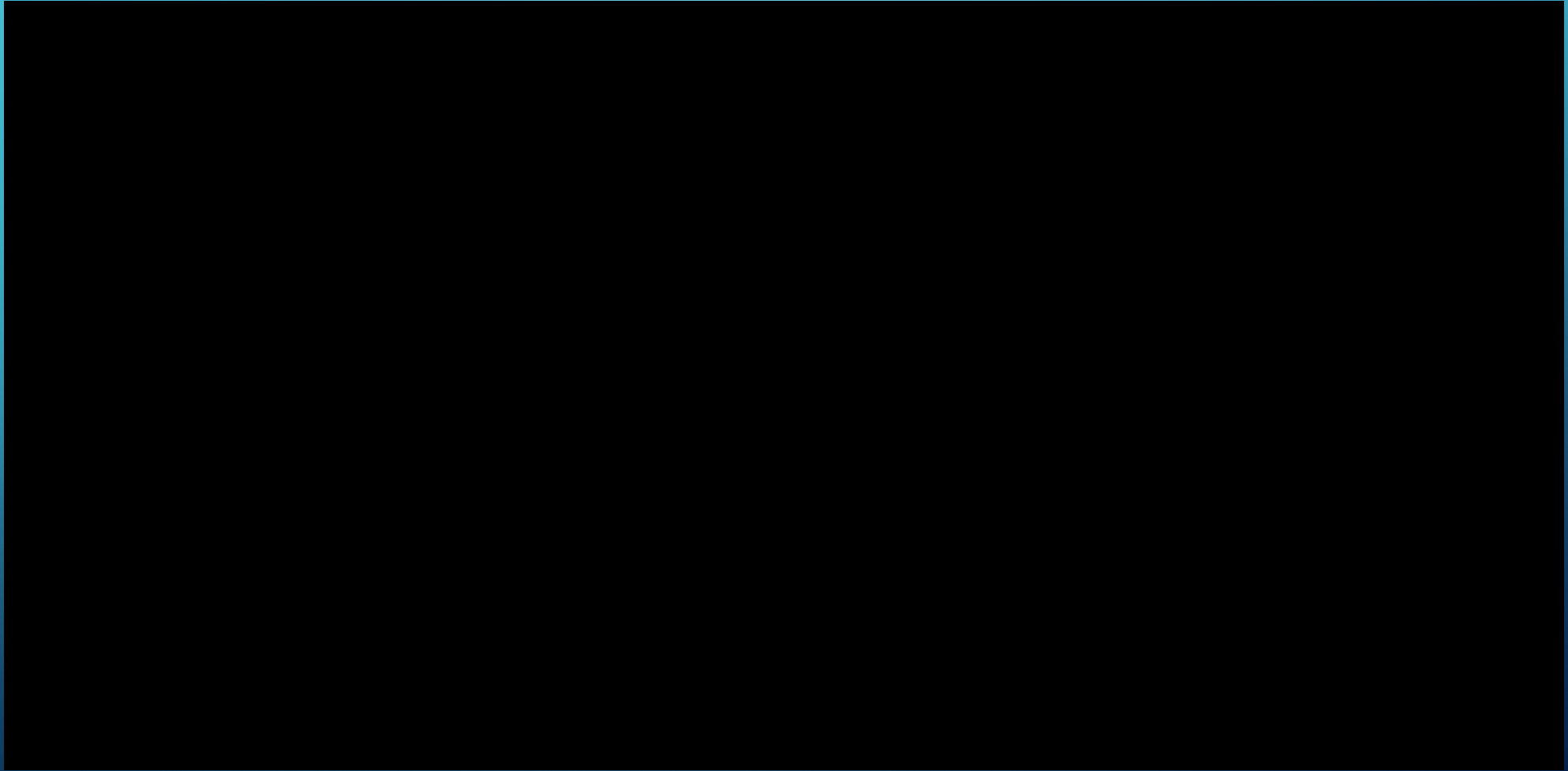
- VGN is an involuntary jerking of the eyes occurring as the eyes are held at maximum elevation.
- For VGN to be recorded, it must be distinct and sustained for a minimum of four seconds.

HGN CLUES (FOUR OUT OF SIX NEEDED)

- The Lack of Smooth Pursuit – The eyes can be observed to jerk or “bounce” as they follow a smoothly moving stimulus. Ex. Marble rolling across sand paper, or windshield wipers across a dry windshield.
- Distinct and Sustained Nystagmus at Maximum Deviation – 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 – The point at which the eye is first seen jerking. IF the jerking begins prior to 45 degrees, it is evident based on research BAC above 0.08. The higher the degree of impairment, the sooner the nystagmus will be observable.

VIDEO EXAMPLES OF HGN CLUES

[HTTPS://YOUTU.BE/CCXST5_6CPG](https://youtu.be/CCXST5_6CPG)



HGN ADMINISTRATIVE PROCEDURES

- Check for glasses (Attorney Note: Glasses cause Nystagmus during this test!)
- Verbal Instructions (Feet together, hands at side; Keep Head Still; Look at stimulus; Follow movement of the stimulus with eyes only; keep looking at stimulus until test is over)
- Position stimulus 12-15 inches and slightly above eye level (Attorney note: Think the distance of a piece of paper)
- Check for equal pupil size and resting nystagmus (Attorney Note: Speed of stimulus movement should be approx. 2 seconds to bring the eye from center to side)

HGN ADMINISTRATIVE PROCEDURES (CONT)

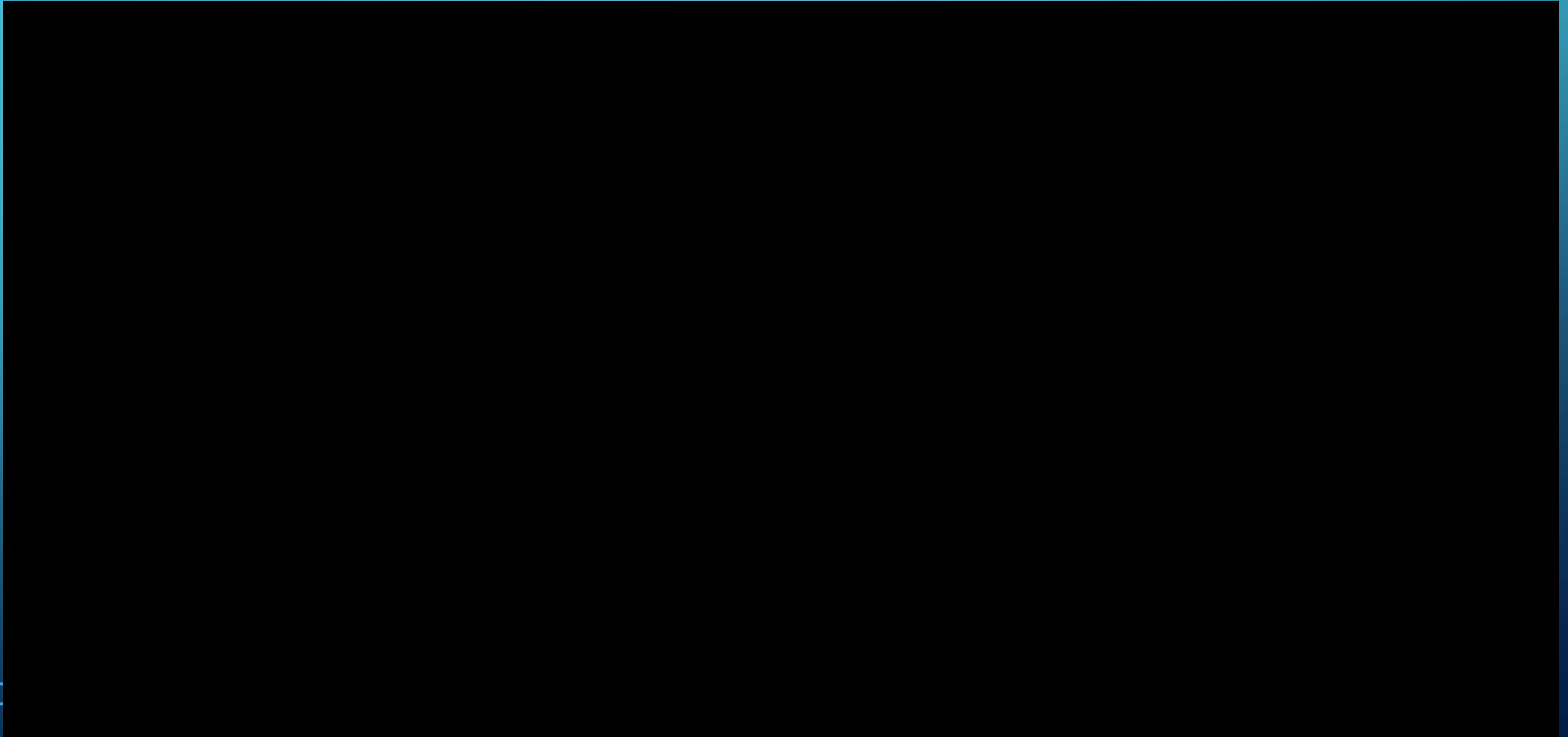
- Check for equal tracking (Attorney Note: Must make at least two passes)
- Lack of smooth pursuit (Attorney Note: Must make at least two passes)
- Distinct and Sustained Nystagmus at maximum deviation (Attorney Note: Must make at least two passes)
- Onset of nystagmus prior to 45 degrees (Attorney Note: Must make at least two passes)
- Total the Clues
- Check for Vertical Nystagmus

WHICH TYPES OF NYSTAGMUS SHOULD I BE LOOKING FOR?

- 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: Watching strobe lights, rotating lights, or rapidly moving traffic in close proximity.
 - NOTE: NHTSA states that this will not effect HGN because of the fixation on the stimulus...

OPTOKINETIC NYSTAGMUS EXAMPLE

[HTTPS://WWW.YOUTUBE.COM/WATCH?V=U3KHGKZHUZC](https://www.youtube.com/watch?v=U3KHGKZHUZC)

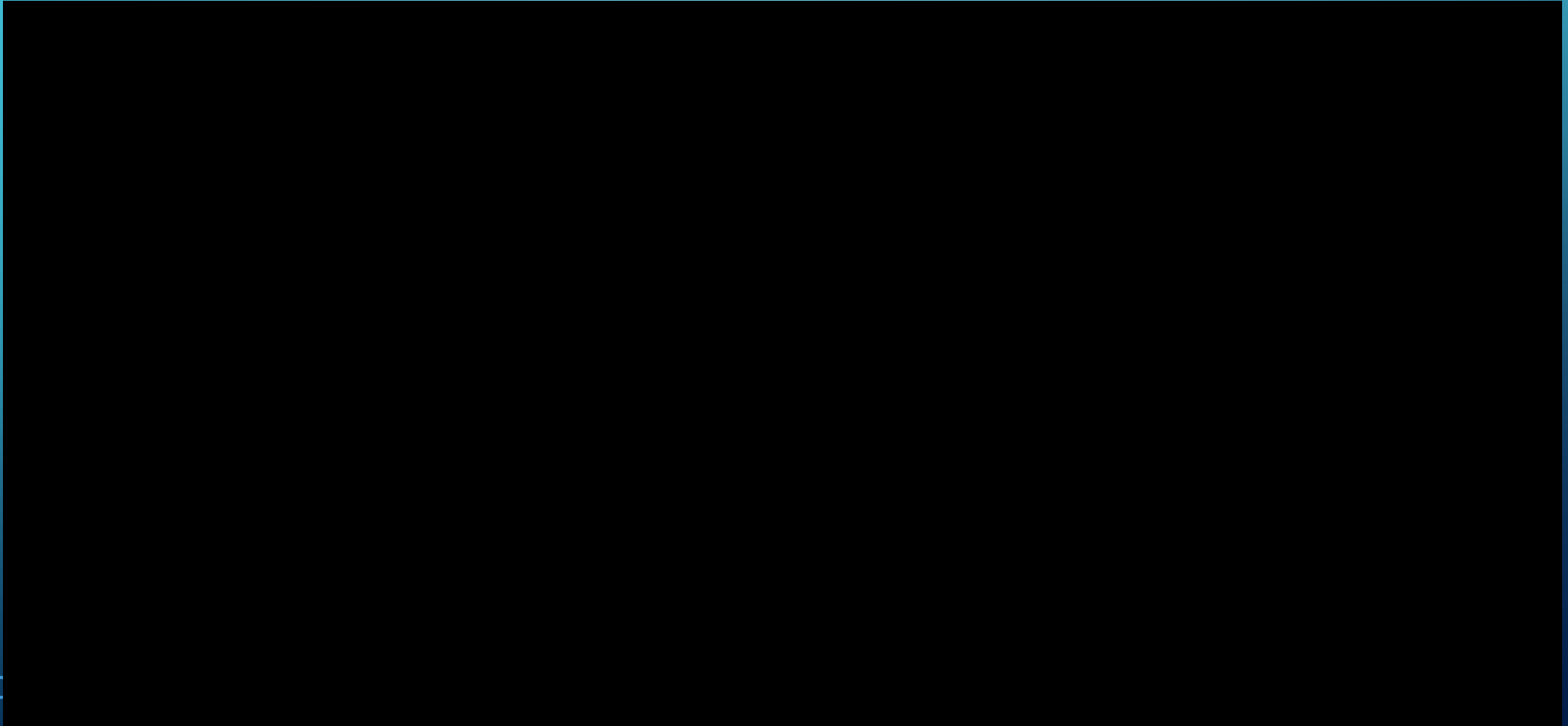


PATHOLOGICAL NYSTAGMUS

- Caused by the presence of a specific pathological disorder, which include brain tumors, other brain damage, or some disease of inner ear.
 - NHTSA states “If one eye show all three clues distinctly while another eye gives no evidence of nystagmus, the person may be suffering from a pathological disorder.”
 - “It is UNLIKELY that the eyes of someone under the influence of alcohol will behave totally different.”

CONGENITAL NYSTAGMUS

[HTTPS://WWW.YOUTUBE.COM/WATCH?V=KZXKMR5XKTI](https://www.youtube.com/watch?v=KZXKMR5XKTI)



FATIGUE NYSTAGMUS

- This type of nystagmus may begin if a subject's eye is held at maximum deviation for more than 30 seconds.
- Officers should only hold maximum deviation for 4 seconds when done properly.
- NHTSA states “ If you think you see only slight nystagmus at this stage of the test, or if you have to convince yourself that nystagmus is present, then it isn't really there.”

WALK AND TURN TEST

Walk and Turn is a divided attention test consisting of two stages:

- Instructions Stage
- Walking Stage

The Instructions stage divides the subject's attention between a balancing task(standing while maintain the heel to toe position) and an information processing task (listening to and remembering the instructions)

Original Research by SCRI showed this test was 68% accurate in detecting BAC 0.10 or above.

WALK AND TURN TEST

- During the Instruction phase, subject must stand with their feet in a heel to toe position, keep their arms at their sides, and listen to the instructions.
- In the Walking Stage, subject must take nine heel to toe steps in the prescribed manner, takes nine heel to toe steps back, counts the steps out loud, 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.

WALK AND TURN TEST INSTRUCTIONS

- Subject to assume heel to toe stance by giving the following verbal instructions:
 - Place 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 arms down at your side
 - Maintain this position until I have completed the instructions. DO NOT walk until told to do so
 - Do you understand the instructions so far?
 - Officer should then demonstrate the test

WALK AND TURN CLUES – 8 POTENTIAL CLUES, BUT YOU ONLY NEED 2 CLUES.

- Cannot keep balance while listening to instructions
- Starts too soon
- Stops while walking
- Does not touch heel to toe
- Steps off the line
- Uses arms for balance
- Improper turn
- Incorrect Number of steps

WALK AND TURN CLUES DON'T MAKE SENSE

- Scoring of WAT ...

9 Non-Heel to Toe Steps down and back = 1 clue and no indication of impairment

vs.

Start too soon and can't keep balance in instructional stage = 2 clues and indicates impairment before the test even starts.

WALK AND TURN TEST

HIDDEN GEMS FROM NHTSA

- Only record the clue of “cannot keep balance while listening to the instructions” if the feet break apart or step off the line – DO NOT record if the subject sways or uses arms for balance but maintains heel to toe position.
- Officer should not record the clue “Stops while walking” if the person is merely walking slowly.
- Missing Heel to Toe only counts if the subject has more than one half inch between the step.

WALK AND TURN TEST HIDDEN GEMS (CONT)

- Only record “uses arms for balance” if subject raises one or both arms more than 6 inches from sides.
- This test will lose sensitivity if repeated several times.
- Things that may interfere with subjects performance of this test:
Wind/Weather conditions, Subject’s age, or footwear.

ONE LEG STAND TEST (OLS)

- It also is a divided attention test consisting of two stages:
 - Instructions stage
 - Balance and Counting Stage

In the Instructions Stage, the subject must stand with their feet together, keep their arms by their side, and listen to instructions.

ONE LEG STAND CONTINUED...

- In the Balancing and Counting Stage, the subject must raise one foot, either foot, with the raised foot approximately six inches off the ground, with both legs straight and 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.
- Officer should demonstrate the test for the subject
- The timing for a thirty second period by the officer is an important part of the OLS stand test.
- SCRI research in 1977 showed that many impaired subjects are able to stand one leg for up to 25 seconds, but few can do so for 30 seconds.

ONE LEG STAND CLUES (TWO OR MORE NEEDED)

- OLS Four specific clues are:
 - Sways while balancing
 - Uses arms for balance
 - Hopping
 - Puts foot down

OLS CLUES DON'T MAKE SENSE

Scoring of OLS ...

Swaying entire time = 1 clue and no indication of impairment

vs.

Foot down and one sway = 2 clues and indication of impairment

ONE LEG STAND HIDDEN GEMS FROM NHSTA

SCRI studies suggested that there are people who have difficulty performing this test:

- Individuals over 65 years of age
- People with back, leg or inner ear problems,
- Or people who are overweight by 50 lbs. or more
- Individuals wearing heels of more than 2 inches. (should be removed)

ONE LEG STAND HIDDEN GEMS (CONT)

- Test should be discontinued after 30 seconds.
- Slight tremors of the foot or body should not be interpreted as swaying.
- “Uses arms for balance” requires the movement of the arm 6 or more inches from the side of the body.

PORTABLE BREATH TEST (PBT) HIDDEN GEMS FROM NHTSA

- NHTSA quote – “Although all PBT instruments currently used by LEO are reasonably accurate, they are subject to the possibility of some error, especially if they are not used in the proper fashion.”
- Two common factors that cause a high PBT result – Residual mouth alcohol (need to wait at least 15-20 minutes before testing) and Breath Contaminants (even cigarette smoke can cause positive reaction on certain devices.)
- Radio frequency interference can produce extremely high or low test results or can cause the PBT to produce no result.

DWI TESTIMONY HIDDEN GEMS

- “Remember, you should not testify that the defendant passed or failed the SFSTs. The tests are not scored “pass” or “fail.” You should testify if the defendant completed the test as instructed.”
- “The person on trial is never a “lady” or “gentleman,” but is always “the Defendant.”