

Adverse Lighting Conditions

Regardless of the shift being worked, or the time of day, the law enforcement officer will be faced with adverse lighting conditions in the performance of their duties. These adverse conditions increase danger to officers, suspects and bystanders alike. Whether these conditions occur naturally, such as day turning into night or are due to man-made conditions caused by moving from a well lit environment to an unlit area, the law enforcement officer must be given the tools to allow them to respond effectively to their constantly changing environment. It will be up to the instructor to be imaginative in the use of frequently inadequate facilities and resources to provide such training opportunities. Such training *must* go beyond instruction in a few flashlight shooting techniques followed by some repetitions with personnel standing on a firing line shooting at stationary targets.

Comprehensive training programs should include (but not necessarily be limited to):

- Discussion of flashlight/equipment selection & accessibility
- Training in the Principles of searching/shooting
- Training in the Techniques of searching/shooting
- Training in issues regarding Continuity of Fire. (reloading/malfunction clearance techniques)
- Techniques for applying the use of flashlights to Cover and Concealment
- Practical application of all of the above in scenario based training to include movement of officers and suspects.

Equipment

The possibility of encountering adverse lighting conditions requires officers to have an artificial light source available to them at all times. For example, a flashlight is effective in complete darkness in areas where ambient, indirect, or dim-light is present, or at times when an officer must look into a dark open doorway while standing in bright sunshine. In each of these situations, the effective use of an adequate flashlight will serve to save lives as well as reduce inevitable anxiety of dealing with the unknown. There will always be the need to clearly see the object in the opponent's hands. The legal complications and emotional trauma accompanying the discovery of an injured innocent bystander after shooting at a muzzle flash in the dark can be avoided by the presence and proper use of the right equipment.

In an age of rapidly changing technology, officers not only must give serious consideration to their initial purchase but also be constantly reassessing new products. This not only applies to flashlights but also to the sighting systems of their weapons. Self-luminous iron sights are available from a number of companies. Many firearms come equipped with them as a standard feature. Commonly called "night sights," they are tritium ampoules mounted into iron sights with epoxy allowing shooters to be able to visually reference their sights when there is otherwise insufficient lighting to do so. There are many configuration options available. The most common is the "three dot" system although others include "bar and dot," "dash-dot-dash," and "box bar" as well as numerous others. Manufacturers provide further options of colors as well as combination

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of colors. It should be remembered that while these sights assist in acquiring sight alignment under adverse lighting conditions, they do nothing to assist with sight picture (location, identification, etc.) which needs to be addressed by the application of artificial lighting. It should also be noted that in good light the luminous inserts do not provide as precise sight alignment (and therefore accuracy) as a clear focus on the edges of the front sight will.

Prior to investing in the equipment, consideration should be given to what the purpose of the flashlight in regards to potential confrontations. Some things to consider:

1. To enable the officer to **Navigate** in adverse lighting conditions. Sufficient artificial light introduced to the environment can eliminate tripping over unseen hazards that could cause injury or cancel out noise discipline.
2. To enable the officer to **Locate and Identify** the threat(s). Location is only one step in solving the tactical problem. The flashlight must be of sufficient brightness to allow the officer to readily identify any object in the hand of those encountered to determine subsequent appropriate action.
3. A good light source should be of sufficient candlepower or lumens to give the officer the tactical advantage of **Blinding and Disorienting** (even momentarily) their opponent.
4. The use of a good light source allows the **sights** of the officer's weapon to be boldly **silhouetted** against the backdrop of the illuminated threat area. This allows good sight picture under adverse lighting conditions whether or not the weapon is equipped with luminous "night sights."
5. Consideration should be given to the flashlight's expedient use as a tool to assist in **self-defense and arrest/control** situations. While other tools may be more appropriately applied to this situation, the question of responding to sudden contact confrontation with the light already in-hand should be considered. Different flashlight configuration, composition, and size provide the officer with optional responses. Training should occur to address these possible situations.

Other factors to consider:

- Evaluating the flashlight size, and configuration as well as the type and location of the switch in relation to the individual shooter's hand size and preferred shooting technique. These issues will effect the placement and accessibility of the light on the equipment belt.
- Weight and durability. Flashlights for use in a law enforcement capacity are usually constructed of aircraft grade aluminum or high impact polymer plastic.

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- Switches should have the capability to be manipulated by means of a pressure switch so that when released they do not remain in the “on” position. The switches are either side mounted towards the head of the flashlight or rear mounted at the end cap. The location of the switch will limit the options when determining the preferred shooting techniques described on pages 8 – 19 in this section.
- Some flashlights come equipped with adjustable beams requiring the twisting of the bezel ring or head of the light to widen or narrow the focus. Owners of these lights should consider maintaining the narrow focus as a default position until the situation requires the wider beam to eliminate awkward manipulation of the flashlight under the stress of a sudden, unexpected threat.
- Some flashlights come equipped with lanyards designed to allow reloads, malfunction clearances, and use of the support hand to clear obstacles without the shooter having to stow the light somewhere else on their person. As with all technology, consideration must be given to the potential disadvantages of having the light attached to the support hand if the officer must go hands-on with a suspect. Additionally, should a secondary malfunction occur, vigorously racking the slide of the semi-automatic pistol with light attached to the support hand can cause it to impact the shooters face. These and other unforeseen issues must be addressed by realistic training. Should the decision be made to use such a light it is suggested that it be carried by looping the lanyard over the thumb and across the back of the hand to achieve the desired shooting grip and still allow it to be released quickly if the need arises.



- Advantages and disadvantages of rechargeable systems versus those requiring the regular replacement of disposable batteries. Keeping in mind the rapid advances in technology, *current* research should be conducted to allow the purchaser to make informed decisions regarding battery life expectancy, replacement battery cost and availability, durability of the systems under adverse weather conditions and battery memory (rechargeable systems.)

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- Availability and accessibility to replacement bulbs if the one in the flashlight is broken or burned out.
- Those who may be tempted to consider the price tag of the flashlight as a high priority must remember that this is an irreplaceable life-saving tool that will see use on a much more frequent basis than their handgun.

Not all uses of the flashlight are with the expectation of a deadly force encounter. Directing traffic, searching for evidence, finding a safe path over uneven ground would be just a few examples. Yet even these circumstances require that consideration be given to carrying the flashlight in a manner that allows the officer to swiftly assume a shooting technique should the need arise. The following **principles** are applicable to situations that rise to the level of the increased possibility of confronting a subject.

Principles of searching and shooting under adverse lighting conditions

Understanding the fundamental concepts of searching and shooting in adverse lighting conditions is the key to successful outcomes. Prior to learning **techniques** it is imperative that law enforcement officers understand the basic **principles** that form the foundation for their actions.

Principles: Fundamental truths, laws, doctrines, or motivational force upon which all techniques are based.

Principle #1 Read the light

There are four categories of lighting conditions

1. Bright High Noon:
 - Well lit.
 - A high level of detail is visible.
 - Conditions allow for good depth perception.
 - Conditions for threat identification are excellent
2. Dawn and Dusk:
 - Can distinguish shapes, texture and colors and noticeable shadows.
 - Conditions for threat identification are impaired.
3. Low Full Moon:
 - There is ambient light source from street lights, residences etc.
 - Able to distinguish shapes.
 - Distance judgment is impaired
 - Conditions for threat identification are severely impaired.

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Principles of searching and shooting under adverse lighting conditions continued:

4. No ambient light:
 - Complete darkness rarely encountered except in underground or windowless structures.
 - Ability to identify threat without artificial light source is non-existent.

Principle #2 Operate from the lowest level of light

- Remember that predators operate from cover of darkness
- Clear dark holes and shadows with light before entering or exposing yourself to them
- Assume that all dark holes and shadows are occupied by armed assailants

Principle #3 See from the opponent's perspective

- Imagine yourself from the opponent's perspective.



- Be cautious of silhouetting yourself against ambient light shining through windows, doorways, or the indirect light from fellow officer's flashlights.
- Whenever possible, position yourself to require potential opponents to have to look into your darkened position.
- Consider what the potential opponent can see and let that perspective determine your safe route of travel when the decision is made to move.
- When working with other officers, be conscious of exposing their location by shining your flashlight directly or indirectly on them.
- Be cautious of ambient light causing your shadow to proceed you into an unsecured area.

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Principles of searching and shooting under adverse lighting conditions continued:

- *When shooting or searching from cover*
 - Move from cover and/or concealment only when safe to do so.
 - When using light from behind cover, be careful not to allow the beam of light to shine on the object being used to avoid reflection back into the face of the officer, revealing their location, preventing them from seeing their objective clearly, and impairing their night vision.
 - Shooting techniques which locate the light to the side of the weapon will tend to partially or entirely block the beam from the flashlight when firing from one side or the other of the cover. Training with alternative techniques will provide the officer with flexibility needed to adapt to all contingencies.
 - Shooting positions which allow the officer to stand back from cover that work well in daylight may need to be adjusted to take reflection into account under adverse lighting conditions. A rule of thumb is to ensure that the lens or bezel of the light is even with, or slightly forward of, the edge of the object being used for cover.
- It is recommended that officers take advantage of playing the part of “bad guy” role players in realistic scenario training to observe what techniques are effective.

Principle #4 Light and move

- When *searching and approaching* suspected threat areas, use the flashlight minimally, turning it off and on in short duration only as needed. Do not allow the steady beam of light to be used by the opponent as a beacon to point out your position.
- Light then move. Avoid remaining stationary unless utilizing effective cover and then avoid reappearing with the light in the same position.
- Whenever possible, when *actively engaging* a threat, use the light while shooting. Shut it off if movement is necessary and turn it on again to reengage from another position. If already in a position of advantage, consideration should be given to maintaining the advantage by keeping the light in their eyes.

Principle #5 Power with light

- Use the flashlight to eliminate all dark holes and shadows offering concealment to potential threats.
- When possible create a wall of light to blind opponents. Communicating and coordinating the use of light and movement with fellow officers can be an effective technique.

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Principles of searching and shooting under adverse lighting conditions continued:

Principle #6 Keep three things aligned

- When *actively confronting* a specific opponent in a known location, keep the weapon, the light and the eyes aligned to enable swift reaction to a threat.
- Non specific searching with multiple potential danger locations may require separation of light and eyes from the direction the weapon is pointing such as when scanning.
- The ability to swiftly and efficiently respond to a threat should be maintained throughout the searching process. The position of the officer's weapon, flashlight, and body must never compromise their ability to swiftly assume a balanced shooting platform should a sudden threat appear.

Principle #7 Carry more than one light

- The primary light source may fail. Batteries, bulbs and switches may succumb to "Murphy's law."
- The secondary light (much like the back-up handgun) should be of sufficient power to accomplish the tasks required of it. It should be carried in a location and manner making it readily accessible. Training must take place to address any differences in configuration and switch location from the primary flashlight.
- If agencies allow for lights to be mounted on weapons it is imperative that a second flashlight is carried for use during searching. It must be remembered that everything that is seen in the beam of the light mounted on the weapon will subsequently have the muzzle pointed at it, thereby violating Safety Rule #2 (Sec. 1 Pg. 3) The hand held light should be used for searching and the weapon mounted light should be considered as one solely intended for fighting.

Once the student demonstrates an understanding of the **Principles** of shooting and searching under adverse lighting conditions it is time to address the applicable **Techniques**.

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Techniques: Methods, procedures or manner of using basic skills to achieve the goal of the Principles.

Shooters should be encouraged to attempt proficiency with a number of shooting techniques to give them flexibility to adapt to the ever changing tactical situation and environment. The techniques addressed in this section represent just some of those which are commonly used in law enforcement. They have the advantage of being tried and proven in realistic law enforcement situations. Variations and modifications of them, as well as any new innovative techniques, should always be examined objectively with an eye towards safety, reliability, and effectiveness under realistic circumstances. These considerations must include stress, movement of the suspect, movement of the shooter, various positions, and use of cover. Each technique will have its own list of advantages and disadvantages that must be recognized and compensated for by both the instructor and the student. There are few, if any, who will find that placing the flashlight in the support hand makes them more proficient as a combat marksman or in dealing with continuity of fire issues. Much training must take place before the student regains the proficiency they had when their dominant hand was the only one occupied by an object.

Handgun/Flashlight Shooting Techniques

1. FBI
2. Harries
3. Chapman
4. Welch
5. Ayoub
6. Rogers

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FBI TECHNIQUE

Flashlight is held palm up or palm down in the support hand with the support arm fully extended away from the student's body. The light is held forward of the student's body to avoid illuminating it in the side-wash of the light. The technique was devised to place the light away from the officer's body in the belief that a suspect shooting at the light would not be striking the officer as they would with other techniques which place the light and weapon together.



FBI Guard



FBI SUL



FBI Pointed-in at the threat

Strengths:

- Adaptable to all flashlights
- Quick to Acquire
- Easy to transition to other shooting techniques
- Effective hands-separate technique allowing opportunity for indirect reflective (bouncing) lighting while keeping the weapon in a ready position.

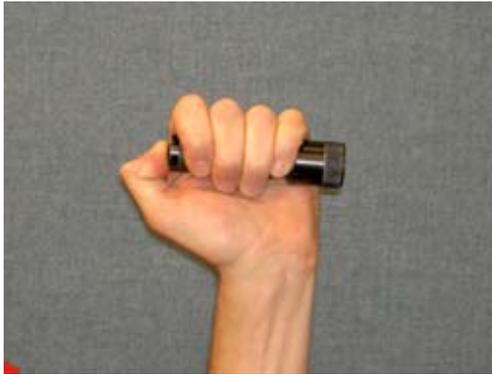
Weaknesses:

- Fatigue quickly becomes a factor, especially when attempting to keep the light source ahead of the body.
- Limits the student to unassisted one handed shooting
- Difficult to align the light beam and sights of the weapon on the target especially when the student, the opponent or both are moving.
- A handgun held with the arm extended, either at the Guard or pointed in on the threat will be forward of the light and therefore visible to the opponent.

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HARRIES TECHNIQUE

This technique named for Mike Harries of the Gunsite Training Center in Arizona, is probably one of the most commonly used of the techniques which place the handgun and the flashlight together. The technique allows for flashlights having the switch either on the side or the rear. The flashlight is held in a reverse grip in the support hand. The switch located on the side is usually manipulated with the middle or ring finger. Switches located on the rear of the light are manipulated with the thumb. When acquiring the two-handed shooting technique it is important that the support hand holding the light passes *underneath* the dominant hand holding the handgun. Care must be taken to avoid placing the support hand in front of the muzzle of the weapon especially when attempting to add stress and speed to the learning process. The back of the support hand should be pressed against the back of the dominant hand in an attempt to dampen recoil of the weapon and keep the two-handed system from coming apart when shots are fired. The handgun and flashlight should be parallel to each other. The elbow of the support arm should be pointing straight down towards the ground. If the support side elbow rises towards a horizontal position, the light will be redirected downwards from the intended threat area. If a larger flashlight is being used, the body of the light may rest on the dominant side forearm of the shooter. This technique is adaptable to the Weaver Stance but not the Modern Isosceles.



Reverse Grip with Surefire light



Reverse Grip with Streamlight SL 20



Support side elbow pointing down



Body of light indexed on forearm

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Harries technique Continued:

Strengths:

- Quick acquisition
- Adaptable to variety of switch placements and flashlight configurations
- Hands-together technique makes it easier to keep the light pointing at the same location as weapon than hands-separate techniques, especially when movement is added to the situation.

Weaknesses:

- Fatigue quickly becomes a factor as isometric, back-of-hand to back-of-hand pressure is applied. The fatigue translates to the support elbow rising up to allow the forearm to hold the weight of the dominant arm causing the flashlight beam to be directed below the intended target area.
- As isometric pressure breaks down due to fatigue, recoil of the handgun increases allowing excessive muzzle flip and increased opportunity for malfunctions to occur. Additionally, keeping the weapon and the light together for multiple shots becomes difficult.
- Danger of pointing the muzzle of the weapon at the support hand when quickly putting the two hands together.

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CHAPMAN TECHNIQUE

This technique is named after IPSC competitive shooting champion and firearms instructor Ray Chapman. The technique can be used by officers using either the Modern Isosceles or Weaver stance. It requires the flashlight to be equipped with a side mounted switch. The body of the light is encircled by the index finger and thumb at the switch leaving the remaining fingers to be placed across the dominant hand fingers that are gripping the pistol. The body of the flashlight is held parallel to the barrel of the weapon by pressing it between the “drumstick” base of the dominant and support hand thumbs. Pulling back and applying isometric tension with the support hand in this position greatly assists in controlling recoil. The switch of the light should be at angled to the left of top center at an approximate 10 o’clock position to allow it to be controlled by the thumb.



Light held between thumb and index finger



Body of light pressed between
“drumsticks” of thumbs



Three fingers of the support hand form grip

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Chapman Technique Continued:

Strengths:

- Good recoil control provided by support hand fingers across the dominant hand grip of the weapon
- Not as fatiguing as Harries technique
- Hands-together technique makes it easier to keep the light pointing at the same location as weapon than hands-separate techniques, especially when movement is added to the situation.

Weaknesses:

- Difficult for officers with smaller hands and full size flashlights.
- Somewhat slower to acquire the grip on the light
- Limited to flashlights with side mounted switches.
- If the body of the light is allowed to drop down into the crease of the palm the light will shine higher than where the weapon is pointing.

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WELCH TECHNIQUE

This technique, named after Officer. Dick Welch, of the Seattle Police Department SWAT is similar to the Chapman technique. It differs in that instead of the body of the flashlight being encircled by first finger and thumb, it is gripped in front of the side mounted switch between the separated first and middle finger of the support hand. The body of the light rests on the upward facing palm of the hand. The switch is angled to the support side in the 9 o'clock position allowing it to be manipulated by the thumb. Unlike the three fingers of the Chapman, this technique leaves the ring and little finger free to be placed in a nearly vertical position across the fingers of the dominant hand gripping the pistol. Pulling back with the support hand applies the isometric tension required to assist in controlling the recoil of the fired weapon.



Light flat on palm of hand between fingers



Ring and little finger used to control recoil



Switch at 9 o'clock position
manipulated by the thumb

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Welch Technique Continued:

Strengths:

- Light tends to remain parallel to the barrel of the weapon
- Good recoil control provided by fingers of the support hand across the dominant hand grip of the weapon
- Not as fatiguing as the Harries technique
- Hands-together technique makes it easier to keep the light pointing at the same location as the weapon than hands-separate techniques, especially when movement is added to the situation.

Weaknesses:

- Difficult for officers with smaller hands and full size flashlights.
- Somewhat slower to acquire the grip on the light
- Limited to flashlights with side mounted switches.

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AYOOB TECHNIQUE

This technique is named after competitive shooter, and firearms instructor, Massad Ayoob. It is designed to be an expedient technique to bring the flashlight and handgun together and is the fastest of the hands-together techniques to acquire. The flashlight, held in the support hand must have a side mounted switch which is manipulated by the thumb. The switch is in the top or 12 o'clock position. The support and dominant hands are not intertwined but instead are pressed together with the base of the thumbs touching. This technique will generally point the flashlight somewhat higher than where the handgun is pointing causing this to be considered a relatively short range technique. The further from the target the shooter is, the higher the beam of light will shine on the threat area. The more flexibility the officer has in their wrists and forearms, the more they will be able to extend the thumb forward thereby more closely aligning the light to the sights of the weapon.



Switch held at 12 o'clock



Thumbs pressed together



Officer's flexibility will determine angle of light compared to weapon's point of aim

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Ayoob Technique Continued:

Strengths:

- Very quick to acquire
- Provides some recoil control compared to hands-separate techniques
- Generally places the light beam at eye level of the opponent when the weapon is pointing at the upper body inside approximately 7 yards. This varies with officer's flexibility.

Weaknesses:

- Limited to shorter distance situations before the light beam is pointed over the top of the threat. This depends upon shooter flexibility.
- This is the least effective of all hands-together techniques at controlling recoil.
- Limited to officers using the Modern Isosceles stance.

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ROGERS TECHNIQUE

This technique is named after FBI agent Bill Rogers and is limited to flashlights of specific design and configuration. Sometimes referred to as the cigar or syringe technique it requires the flashlight to be equipped with a pressure switch on the back end of the light and rubber grommet or collar on the body such as the Surefire 6Z. The flashlight is grasped between the first and middle fingers of the support hand in front of the grommet or collar. The pressure switch is against the base of the thumb and is turned off and on by flexing or releasing of the fingers to manipulate the pressure switch.



The knuckles of the support hand are pressed against the knuckles of the dominant hand to align the weapon and light and assist in controlling the recoil.



Depending on officer hand size, more recoil control is provided by placing the available fingers of the support hand across the fingers of the dominant hand. Pulling back with the support hand applies isometric tension to the grip.



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Rogers Technique Continued

Strengths:

- Quick to acquire
- Assists in Recoil control especially when applying isometric tension with the ring and little fingers of the support hand.
- Good at keeping the light and handgun aligned.

Weaknesses:

- Limited to flashlights of specific size and design.

SEARCHING WITH THE FLASHLIGHT IN-HAND

Whether the situation requires that the weapon is in the hand of the Law Enforcement Officer or not, anytime the flashlight is being used, it should be carried in the support hand with the grip that is used when applied to the shooting technique of choice. This would allow an efficient response should an unexpected threat appear. Once the student has had an opportunity to determine which of the shooting techniques they prefer, training should include; responding to a deadly threat with both the light and handgun stored on the equipment belt, with the light in-hand and weapon holstered, and with the weapon in-hand and light stowed on the belt. This training will reinforce the manner in which the light is carried both in-hand and the location on the equipment belt.

CONTINUITY OF FIRE WITH THE FLASHLIGHT IN-HAND

Training must address the question of what to do with the flashlight when it comes time to perform a reload or clear a malfunction with the handgun or simply when the support hand needs to be free to open a door or move an obstacle out of the way during a search. Due to changing technology where high intensity flashlights are becoming available in smaller and smaller configurations, there is no *single* answer. The tried and proven methods will be addressed here but the bottom line is that whatever system is devised, it must be proven to be reliable under realistic conditions and stress. Training must emphasize the use of, or the moving immediately to, cover (when available) whenever reloading or clearing of malfunctions becomes necessary. The reload or malfunction clearance procedure will take more time under all circumstances when the flashlight is in-hand and it is therefore even more imperative that the officer's eyes be kept "up" to view the threat area. **It is extremely important that the light is always turned off prior to placing it anywhere.** Leaving it on under the armpit, in the belt, the pocket, or anywhere else will act as a beacon, disclosing the officer's position to the opponent. Prior training in Continuity of Fire issues which stress keeping the eyes on the threat area instead of focusing on the weapon will pay dividends when clearing malfunctions and reloading in dark environments.

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Continuity of Fire Continued:

Where to stow the light?

- If the flashlight is of sufficient size, it can be placed under the dominant side armpit. The dominant side is preferred over the support side since the support hand and arm will be more active, reaching for magazine pouches, racking the slide, reaching out to open doors, etc.
 - With all storage locations the shooter should be conscious of placing the flashlight in a position that allows them to consistently reacquire the switch without fumbling for it.
- Placing the smaller flashlights under the armpit can be very unreliable. Not only are they difficult to secure, but also difficult to reacquire with any degree of dependability. Alternatives may be to place them in a pocket or waistband. Another consideration will be to position the flashlight holder in a readily accessible location on the belt where the light may be placed and recovered easily. Style and configuration of the holder will be a factor.
 - With all storage locations, the officer should be conscious of placing the flashlight in a position that allows them to consistently reacquire the switch without fumbling for it.
- If in a kneeling position behind cover where movement is unlikely, the flashlight may be secured behind the knee. Should movement become necessary, using this alternative could likely result in loss of the light. Applying pressure to the knee with the light behind it can potentially cause injury.
 - With all storage locations, the officer should be conscious of placing the flashlight in a position that allows them to consistently reacquire the switch without fumbling for it.
- When the flashlight being used is small enough, some may be tempted to maintain control of it in the support hand while performing reloads and clearing malfunctions. The individual officer's hand size becomes one obvious factor that will contribute to doing this successfully. Yet it should be pointed out that many a technique which is successful on the range, even with large hands and small lights, will fail when sweat, adrenalin, stress, and movement is added to the scenario. Considerable training should take place under realistic conditions before this becomes the student's preferred method with reliability taking precedence over speed.
 - It is not uncommon to make the potentially fatal error of leaving the light on when it is retained in the hand rather than linking it to a distinct effort to place it elsewhere.

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TRAINING IN ADVERSE LIGHTING CONDITIONS

Safety rules and equipment:

While absolutely necessary, firearms training in the dark is wrought with drawbacks. Not being able to observe the muzzle of the student's weapon, the indexing of their trigger fingers and whether or not they are wearing their eye and ear protection are serious safety concerns. Not being able to observe the student's technique, eyes and body language are serious learning concerns making it difficult for the instructor to make necessary corrections. Firearms training under adverse lighting conditions requires instructors to adapt procedures, rules and equipment to compensate.

- Whenever possible, students should be given the opportunity to at least familiarize themselves with skill steps in a lighted environment prior to placing them in the dark.
- Using a coach/pupil teaching method allows an extra set of eyes in close proximity to each person holding a weapon and contributes to overall safety of the class as long as specific instructions are given to each coach to address the added responsibilities.
- Increasing the ratio of instructors to students is another worthwhile safety precaution.
- A clear safety briefing should take place prior to the training
 - Students should be cautioned to keep conversation to a minimum so that all commands can be heard and obeyed immediately. Communicating instructions to the students can be further impeded on indoor ranges where the wearing of ear plugs as well as ear muffs is advised.
 - Emergency "cease fire" procedures are explained
 - Specific commands and procedures regarding loading and clearing of weapons are explained.
 - Instructions to ensure that all students are back from down range prior to starting an exercise and that all weapons are holstered before leaving the firing line.
 - Reaffirming that students as well as instructors are "safety officers." Anyone observing a situation that creates a potential safety hazard should call "cease fire."
 - Students should have all necessary equipment with them when they come to the firing line. No one should leave the line without express permission by the lead instructor.
- Instructors should wear light colored clothing. The customary "instructor red" appears black in the dark. Consideration should be given to adding reflector tape to their outer garments.
- Chemical light sticks should be used by both instructors and students with different colors to differentiate between them such as red for the instructors and green for the students. The students should wear them on their backs to make them readily visible to the instructors.

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TRAINING IN ADVERSE LIGHTING CONDITIONS

Safety rules and equipment continued:

- Instructors should ensure that they fully charged lights and back-up lights to conduct the training. In addition to these primary light sources, small pen lights or lights with red lenses are effective for reading outlines or notes, or can be used to facilitate non-verbal communication between instructors.