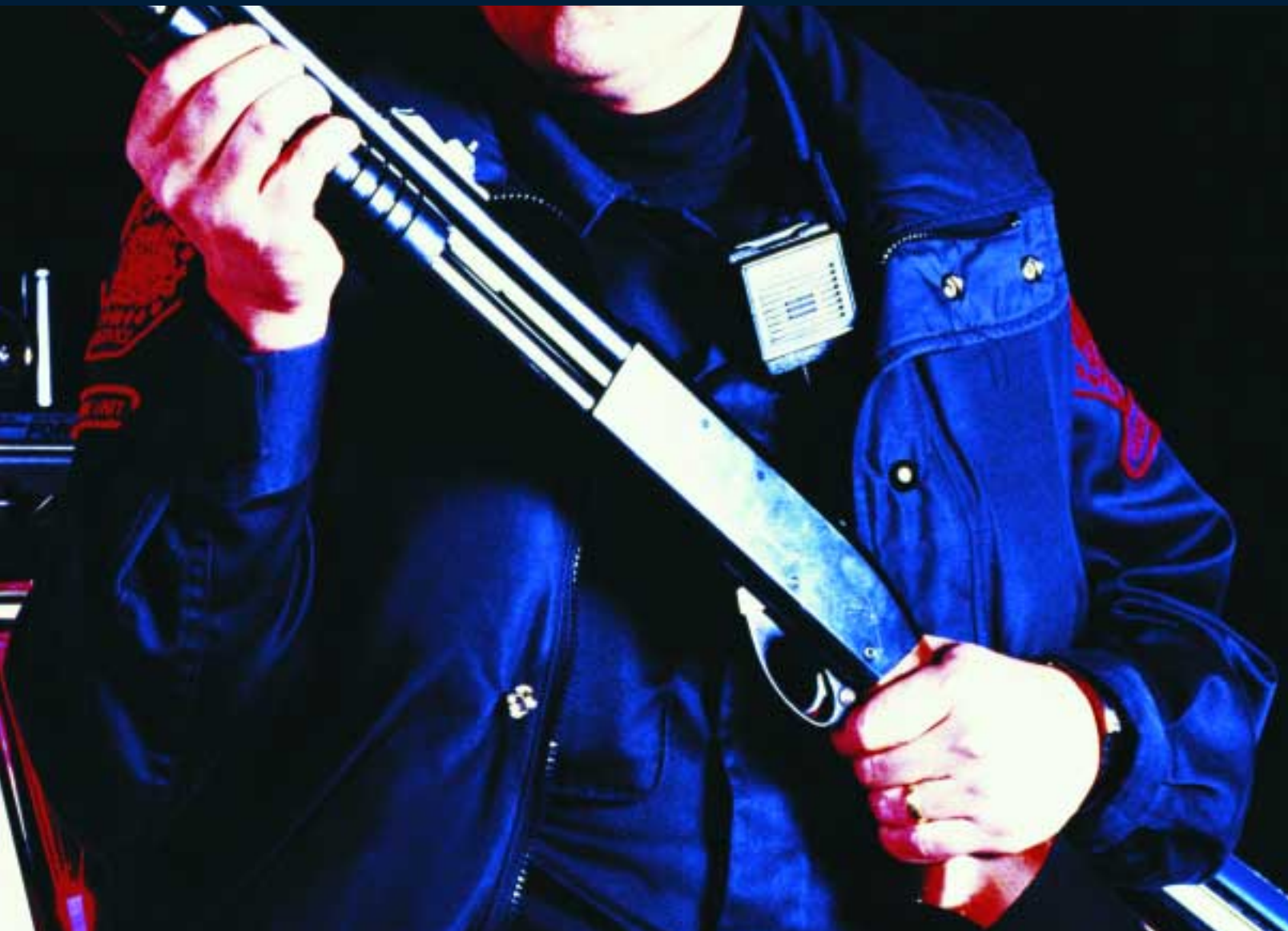


THE
FIREARMS
INSTRUCTOR

The Official Publication of The International Association of Law Enforcement Firearms Instructors®



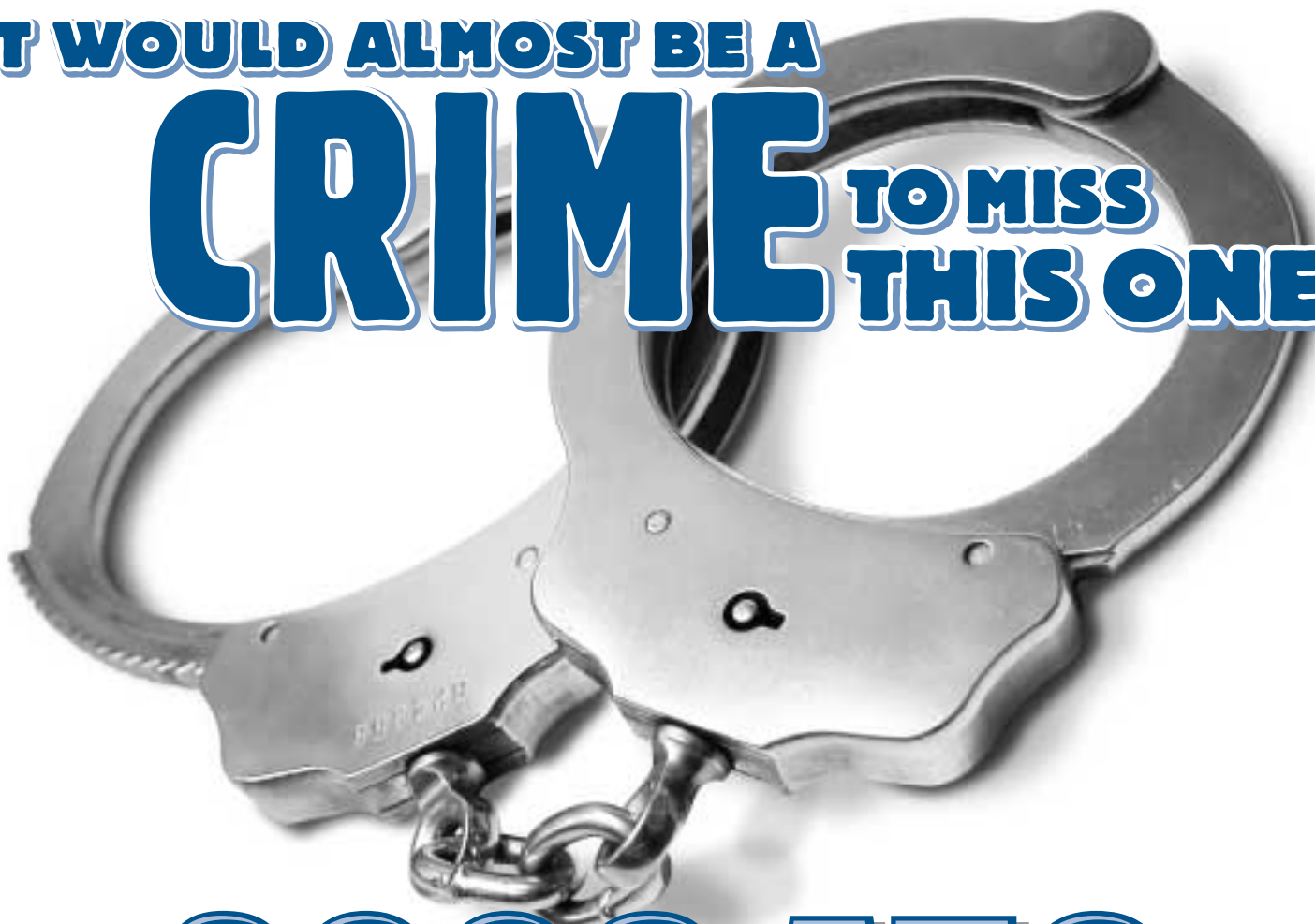
Featuring articles by:

James M. Adamcheck ◦ Michael J. Asken, Ph.D. ◦ Mike Beckley
Robert D. Bossey ◦ Robert L. Connolly ◦ Martin J. Greenberg, MD
Dave Grossi ◦ L.A. Hamblin ◦ Michael T. Rayburn ◦ George Rogers
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ISSUE**

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The International Association of Law Enforcement Firearms Instructors® is a non-profit membership organization with aims and purposes to provide educational services, encourage the development of relevant training programs for law enforcement personnel, criteria for Instructor certification, and to conduct an Annual Training Conference. IALEFI® active membership is open to those professionally engaged in the training of law enforcement, security, criminal justice, and investigative personnel.

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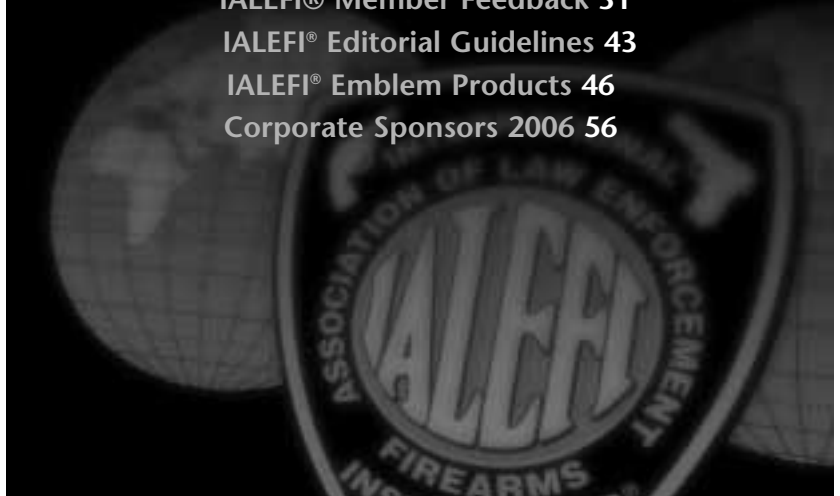
THE FIREARMS INSTRUCTOR ISSUE 40

Features

- | | |
|--|---|
| <p>4
The Tactical Scan
<i>by George Rogers</i></p> <p>6
Firearms Qualification Standards
<i>by Detective James M. Adamcheck</i></p> <p>9
Regional Training
<i>by Mike Beckley</i></p> <p>10
2005 Annual Training Conference Photos</p> <p>14
Avoiding the Stale Beer Effect: Improving Retention of Learned Police Skills
<i>by Michael J. Asken, Ph.D.</i></p> <p>19
Medical Ballistics
<i>by Martin J. Greenberg, MD, FAAOS, FACS</i></p> <p>27
We've Identified the Enemy, It Is Us!
<i>by Robert D. Bossey
IALEFI® Executive Director</i></p> <p>29
The Changing Roles of Firearms Instructors
<i>by Dave Grossi</i></p> | <p>32
Aiming for Inside the Skin
<i>by Officer L.A. Hamblin</i></p> <p>34
Hip Shooting: The Ultimate CQB Drill
<i>by Michael T. Rayburn</i></p> <p>38
Shootings: Moving Off The Line
<i>by George T. Williams</i></p> <p>44
IALEFI® Loses a Good Friend
<i>A Farewell to Sergeant Ron Hudson
by Robert D. Bossey</i></p> <p>48
Can I See Your Gun?
<i>by Captain Robert L. Connolly</i></p> <p>51
IALEFI® Homeland Security & Counter Terrorism Conference
<i>by Garrett W. Voorhees, III</i></p> <p>53
Mindsighting: Training Psychological Skills for Maximal Shooting Performance
<i>by Michael J. Asken, Ph.D.</i></p> |
|--|---|

Departments

- The President's Message 2
IALEFI® Member Feedback 31
IALEFI® Editorial Guidelines 43
IALEFI® Emblem Products 46
Corporate Sponsors 2006 56





THE PRESIDENT'S MESSAGE

The 25th Anniversary Annual Training Conference in Reno, NV has come and gone, but we still continue to celebrate the accomplishments of the Association. The conference was an overwhelming success. The conference included great members, great instructors, outstanding support from our corporate sponsors, and a great time to say thanks to our founders.

On a more personal note, I want to say thanks to all that have contributed to our Hurricane Relief Fund. The office has been calling members in the hurricane stricken area to determine who needs help. At this time we have found several of our members who sustained property losses, and these funds will be distributed directly to those members to aid in those losses. What a great credit to the Association to truly look after its own.

I'd like to make mention of two events, one completed, and one coming up. The first of which is the Regional Training Conference which was held in Atlantic City, NJ. This conference on Homeland Security and Counter Terrorism offered great workshops such as "Sharing the Secrets of Israeli Counterterrorism" and Similarity & Difference Between Suicide Terrorism in Iraq and Israel conducted by Avi Leshen and Yourm Doctori. COL. Danny McKnight conducted a workshop on "Success Through Leadership and Commitment". Most of you will remember COL. McKnight as the Ground Force Commander in Mogadishu. He is portrayed by Tom Sizemore in the movie "Blackhawk Down." Capt. Mike Williams conducted his workshop on "Crisis Response to School and Workplace Violence". Additional topics included LT. Tom Earnhardt's workshop on "SWAT Tactics for Patrol", and Rich Tullis' workshop "Recognizing & Interdicting Terrorist Threats." This was a great conference, great instructors and accommodations at the Sands Hotel and Casino at a great rate.

Our next major event will the Annual Training Conference to be held June 11 – 16, 2006 in West Palm Beach, FL. The Palm Beach County Sheriff's Office will serve as our 2006 host and they are anxious for our arrival. The ranges are excellent, the hotel is excellent and we look forward to seeing friends and family again in the spring. Instructor proposals are now being accepted to teach at this event so go to the IALEFI® website at www.ialefi.com and complete the document.

Until that time, please be safe and remember to be more than just a member. Write an article for the *Firearms Instructor* Magazine, host a Regional Training Conference, be a part of the Forum on the website, recruit a new member, and be at the ATC.

Best wishes and be safe.

Steve Johnson



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THE TACTICAL SCAN

BY GEORGE ROGERS

In recent years several Law Enforcement and Military agencies have been teaching their personnel involved in shootings, both in the field and on the practice range, to scan the threat area before returning the pistol to the holster.

The purpose of the scan is to break Officers of the mechanical habit of immediately holstering a firearm, when there may still be a deadly threat to encounter. The training was intended to have Officers double check that the threat is neutralized, and that the threat area is stable, before dropping their guard.

Although the pre-holstering scan tactic is a step in the right direction for Officer Safety, there are some flaws in the method in how it is being taught, and in the delivery of the premise that it is founded on. Both can reduce survivability outcomes in a real situation.

By observing many of the Officers and Agents on firearms range firing lines; it becomes apparent that there are several different methods of scanning before re-holstering firearms. They range from no scan, to an exaggerated left-right scan looking either through the sights, or directly over the barrel. What many of these trained Officers are demonstrating is what can be referred to as a *Mechanical Scan*.

Not scanning, or ineffectively scanning a threat area can produce negative consequences.

The *Mechanical Scan* is an example. The *Mechanical Scan* is a taught and learned method that resembles a robotic, automatic repetitive technique that actually reduces the field of vision, and can hinder movement in reacting to a threat.

By looking either through the sights or directly over the barrel while scanning, the Officer is focusing on a narrow angle of the threat area and reducing peripheral vision. This is compounding the body's normal reaction to high stress incidents that often produce auditory and visual exclusion. In effect, creating or compounding Tunnel Vision.

Another consequence of the *Mechanical Scan* lies in

the body mechanics of moving one's eye, hands, and weapon as if it was a turret on a tank. If the hands and weapons system are out and pointed in an extended left or right position, and a threat should come from an opposite direction, reaction time and body dynamics put the Officer in an awkward and vulnerable position. Having to swing back to engage a threat, reduces reaction time and often results in swinging past the target. This consequence is compounded by what many Officers demonstrate on the range as a conditioned automatic scanning from left to right.

A more effective method for scanning and teaching a sound scan technique, can be referred to as the *Tactical Scan*. The *Tactical Scan* is used by law enforcement and military special operations teams for Close Quarters Battle (CQB) situations, and is a good practice to develop at the earliest stages of firearms training. It serves as a base and building block for the firearms training progression that is designed to increase officer effectiveness and survivability in an armed encounter.

Tactical scanning involves the coordination of the position of the hands and weapon, in conjunction with the position and movement of the head and eyes.

Tactical trainers often observe inexperienced students looking, but not seeing threats and threat areas. This skill takes time to develop, and the degree to which one acquires it is often what separates the people that are selected for special operations teams, and the ones that are not. It can also determine who survives armed confrontations.

In order for one to enhance visual perception in a CQB situation, it is important to maximize the angle of vision, both horizontal and vertical, which includes the peripheral. An Officer must also be able to both look, and see. An example of this training skill is what some special operations units refer to as the SEE method: See the threat; Evaluate the threat; Eliminate the threat.

In order to conduct these functions special operators

“THE *MECHANICAL SCAN* IS A TAUGHT AND LEARNED METHOD THAT RESEMBLES A ROBOTIC, AUTOMATIC REPETITIVE TECHNIQUE THAT ACTUALLY REDUCES THE FIELD OF VISION, AND CAN HINDER MOVEMENT IN REACTING TO A THREAT.”

are taught by telling them the analogy to put their “head on a swivel” when operating in a threat area.

This simply means that they must rapidly scan with their eyes as much of the threat area as possible, by moving their heads, and eyes. It does not allow for a mechanical or predestinated left to right, or completely horizontal scan. It conditions the eyes to view, work, and absorb more of the entire threat area, and helps to prevent tunnel vision.

By seeing and processing more of the threat area, the Officer is more likely to regain or maintain composure and feel a sense of control and composure – essential to good decision making and survivability.

The *Tactical Scan* requires and reinforces the strong fighting stance as the platform to launch both defensive and offensive action. The weapon is held in the low-ready position, which is down below the Officer’s field of vision, at approximately 45 to 60 degrees. This allows the head and eyes to scan back and fourth, over and not through the weapon. Peripheral vision of the threat or walking area is not impaired by the weapon system. Weapon movement is not exaggerated and more subtle. The weapon moves with the body not the eyes. The knees are slightly bent, and the shoulders and body armor are square to the threat area. When a threat has been eliminated or threat area neutralized, the weapon is pulled close into the body, in a modified low ready position. The body is set for rapid vertical or horizontal movement.

In this position, a threat detected by proper visual scanning can be addressed by punching the weapon out, directly at the threat. Once the threat has been evaluated, and eliminated as a threat, this stance allows the Officer to shoot and move, move to cover, assume a position to gain tactical advantage, shield the weapon during a combative assault, re-holster the weapon, or continue the SEE process.

Continuing the SEE process, or SEE process loop,

requires scanning the threat and entire threat area. Again, this requires expanding the normal 180 degree horizontal field of view by keeping both eyes open, swiveling the head, and moving the body.

Even on a static line, and complying with the Laser Rule, an Instructor can instill and develop good survival habits by understanding and teaching the principals and proper application of the *Tactical Scan*.

Summary:

- The Tactical Scan conditions Officers to see and observe a larger field of view of the threat and threat area.
- It trains an Officer’s eyes and senses to see and detect, and then to process and evaluate threats more effectively, enhancing judgment and survivability.
- It helps prevent Tunnel Vision and enhances an Officer’s ability to regain or maintain composure and control.
- It develops a stable shooting platform and enhances weapon handling skills and reaction time.
- It develops good survival habits.
- It establishes a foundation to build more advanced tactics on. **TFI**

About the Author:

George Rogers has 30 years experience with the Baltimore County Police Department, serving as a SWAT Team Leader; Counter-Sniper Instructor; Police Shooting Team Investigator; High Risk Entry School Instructor; and Commander of the Dignitary Witness Protection Team. He has been an Instructor with the Federal Law Enforcement Training Center since 2003.

Firearms Qualification

Standards

**By Detective
James M. Adamcheck**

I have been debating for some time whether or not to write this article. I, as well as many other Firearms Instructors, am just returning from a great Annual Training Conference in Reno, Nevada. If any of you are like me, when we get done at the end of the training day at an RTC or the ATC; our heads are spinning with ideas and new things we want to do with those we are responsible to train.

During an RTC a few years ago in Dayton, Ohio we were talking about qualification standards. The majority of the instructors at the RTC all stated that they had qualification scores that ranged from 70% to 90%. As I stood there with my good buddy, fellow instructor, and old scout car partner, Joe "Little Joe" Ferrera we looked at each other and said, "what the heck, let's get this conversation going." I advised the group that our department, Southfield Michigan Police Department, has 100% Qualifications and had been doing this now for two years. The looks we received from our fellow instructor went from amazement to excitement. I'm sure there were some jaws that needed to be picked up

also. To my amazement the questions started flying our way as if we were the devil himself. I was put back at the number of my fellow Firearms Instructors that thought we were absolutely crazy. The best response that I had and use today to defend our 100% qualification is, "How can we as Firearms Instructors accept anything but 100%?"

I would challenge anyone out there to tell me that the public accepts anything but 100% when it comes to the use of deadly force. I just finished reading the latest copy of *The Firearms Instructor*. John Meyer has a great article regarding the use of Dynamic, Realistic Training for the Real World, Jeff Hall's article on *The Fallacy of "Indexing"*, and many others. All of these articles are stressing the need for us to train our officers in the most realistic manner as we can. Are we being negligent in our training not requiring officers to get 100% on qualifications?

Let me give you a little history on how we were able to sell the 100% qualifications to our Chief, Legal Department, and more importantly the officers.

In 2000, I was reassigned to the department's Staff Services Section as the Intelligence Officer. I had been

away for the prior 6 1/2 years assigned to the Detroit Division of the DEA. While assigned to DEA I had the opportunity to go through a lot of doors. There were a lot of times that my handgun was out of the holster. I started thinking about how much training I really had in the area of firearms, like many of us, not a whole lot.

Due to some other circumstances, I was soon re-assigned as the department's Training Coordinator and Primary Firearms Instructor. This was a spot that I wanted as a young officer but knew I needed time on the streets and in this career to prepare myself to be effective in this position. As I previously said, Joe and I worked together for many years and soon Joe and I were working together again in Staff Services. I was running Training and Firearms and Joe was doing the Research and Development of Training and Equipment. For those who know Joe and me, this was a dangerous partnership.

We were sitting around one day and asked why we as Firearms Instructors don't require our officers to shoot 100% in qualifications. Of all the duties and responsibilities that we have, firearms issues are the most serious and we only expect officers to be 70% efficient. To me this meant that 3 rounds out of every 10 rounds I shot could go anyplace and no one really cared. What a message, huh? This was great for me as the officer behind the gun, but what about the innocent people at the business end? We started talking and I asked several officers what they would think of if an officer was employing deadly force and missed, hitting someone in their family. You wouldn't believe the responses. Why, when it comes to loved ones being involved in police actions, we as police officers demand perfection?

I started looking at the national average for hits in police related shootings and was surprised that the bad guys had a greater hit ratio than the police officers did. The national average for hits in police shootings is from 14% to 18%. This figure is horrible and in my mind is unacceptable from a group of people that call themselves professionals. This figure is unacceptable to our families and the citizens we are sworn to protect. We all know that we could never really go into a civil court and tell a jury that this figure is acceptable and not expect them to hand down a judgment that would rock your world. We as professional Firearms Instructors cannot accept that either.

We decided to try and change things, so Joe and I put our facts and figures together. We spoke to the attorney that represents the city in Civil Cases as well as a large number of others in the Use of Force fields. When we talked to our attorney he was delighted. I have known this guy for many years. He told us that if we were able to institute this new standard, his job would be a lot easier if we ended up in civil court on a shooting. We were warned though that we needed to make sure that all the I's were dotted and T's were crossed. We would need to have a policy in place that

I would challenge anyone out there to tell me that the public accepts anything but 100% when it comes to the use of deadly force.

was fair for the officers but instituted the consequences for failure to qualify. We also needed to document how the officers did in qualifications. This documentation had to include the pluses as well as the negatives and what we did to correct them.

We then talked to the Chief, Dr. Joseph E. Thomas, Jr. he was skeptical to say the least. Chief Thomas is a "Cop's Chief", a man that is approachable and will buy into your ideas if you can justify what you are telling him. We explained to him what we were proposing and why. Chief Thomas gave us the green light. Now the fun began.

We decided to start with our qualifications and bring them into reality of what was happening on the streets, "The real world." We know that the majority of police related shootings happen within 21 feet or less. As with anything in this career, things can only get worse from there. Seventy Percent of all police shootings occur in low light conditions that are so severe that the officer's vision is compromised to the point that they wouldn't be able to pass the basic driving eye test. To make sure that we are always behind the curve, we can't forget 85% of all police involved shootings occur within a 10 foot range.

Our first goal was to make qualifications realistic. We had been shooting the same qualification course for years. It was so bad I remember standing in the booth, counting in my head the seconds until the target turned again. We were creatures of habit. What were they testing, my ability to shoot and hit the target or to see if I remembered the times and course of fire? Joe and I decided the days of shooting the same course of

We had been shooting the same qualification course for years. It was so bad I remember standing in the booth, counting in my head the seconds until the target turned again. We were creatures of habit.

fire was over. We assigned the task of writing courses of fire to the other Firearms Instructors. We gave them the guidelines, broke the Firearms Instructors into small groups, and assigned them a weapon to write the course for. To this day I have not run out of their courses. They may get modified here and there, but the program is owned by all the Firearms Instructors.

The hard part was the policy. The end result went this way; officers are given a period of time that they must qualify. Sometimes it's 30 days other times it's 60 days. The officer goes to qualifications and shoots the course. They must put 100% of their rounds in the target silhouette. Again, we are not shooting a competition where putting multiple bullets through the same hole is the objective. We are in the fight of our life and want to create as much trauma to the target making them stop their aggressive actions. So the arms hands, hips, and other areas of the body counted as hits.

We explained to the officers that the best way to do this is to damage as many of the organs the adversary is using to continue his or her aggression. We stressed to our officers that they needed to get out of the mindset of one stop shots, and we do not shoot to kill; they need to continue to shoot until it stopped the aggressor's actions.

If an officer fails to qualify the first time through they are allowed to shoot it over again one time. If they fail to qualify the second time through they are not allowed to shoot the course again that day. We have learned that the learning curve goes down dramatically and officers stress themselves out too much after the second try. The officer is debriefed on what they think they are doing wrong or the Firearms Instructor conducts remedial training with them. The officer has the choice to continue with additionally remedial training or attempt to qualify again another day within the specified time period. If the officer cannot qualify in that specified time period, the policy is in place to start disciplinary actions to include taking their weapons. To the credit of our officers and Firearms Instructors we

haven't had to go that route and we are now in the fourth year of 100% qualifications.

These qualification standards have the blessing of all the legal departments and the Administration. When we first instituted the new guidelines there were a lot of people who did not qualify the first time through. I remember getting called into one of the Deputy Chief's Office and told that he heard the course of fire was too difficult and people weren't passing. I asked him to hold onto his opinion until he shot the course. (Yes, our Deputy Chief's and Chief attend training and qualifications.) After he shot the course and qualified the first time through, he dismissed the complaints.

Some of the officers were upset that we were making qualifications more difficult. We explained to them that we were actually making them accountable for every round that came out of their firearms. They could no longer get away with 70%. After explaining to them why we needed to demand more from them they understood. Some didn't like it and still don't but they do it and their shooting skills have increased 100%. We have had three shootings since the inception of 100% qualifications and every round has hit its intended target. By demanding our officers to shoot 100% we may have just increased the average number of hits to 36%.

In closing I am challenging all of you as Professional Law Enforcement Firearms Instructors to adopt a 100% qualification standard. I understand that a lot of this has to do with training, but that's another issue for another article. I believe that by making the qualification standards higher we will someday make the national average for hits increase to a number higher than 18%.

We owe it to ourselves as professionals, we owe it to the officers we are tasked to train, we owe it to the citizens we are all sworn to protect, and most importantly we owe it to our families who expect us to come home to at the end of the shift. We need to stress the point that it's a matter of winning not surviving and I will leave that to a new friend, Jeff Hall to explain. **TFI**

REGIONAL TRAINING

BY MIKE BECKLEY

The concept of the Regional Training Program was first proposed by an IALEFI® Board member, Lt. Ron Hackney of the Detroit Metropolitan Police. The first regional was held at the Detroit Metropolitan Police Academy on July 14-15, 1986. The presenters included Bill Vanderpool and John Hall, firearms instructors at the F.B.I. Academy at Quantico, VA, Chief Jim Garside of the Nassau County, NY Police Academy, Elizabeth Callahan of the Washington DC Metro Police Dept, Dr. Christine Paynard and Dr. Harley Stock, noted psychologists.

Some of the topics covered included progression of the use of force by police officers, dealing with problem shooters, the F.B.I.'s new firearms program, and post-shooting trauma. Some ninety police firearms instructors attended and the program was well received.

Ron's idea caught on and the IALEFI® Board of Directors created a Regional Training Committee and established Regional Coordinators. By 1997 Regional Training Conferences were being held in Mesa AZ, Miami FL, Long Island NY, Jackson Township NJ, Pittsburgh PA, Philadelphia PA, Burbank CA, Oklahoma City OK, and Orange County FL.

Over the years these regionals have helped to not only increase membership in IALEFI®, but more importantly, they have brought new concepts and ideas in firearms training to local agencies.

My first regional was held at the IRTC Shooting Range in West Hampton, NY on June 2-3, 1989. The courses included an H&K MP5 subgun live fire class by John Meyer, then the director of the H&K Academy, a use of force lecture by Chief Jim Garside and a Dynamic entry class using force-on-force exercises in the IRTC shoot house. Over forty law enforcement officers from NY, CT, MA, NH, DE and NJ attended.

Since that time, with the help of Barney Mundy, Chief Firearms Instructor for the Nassau County Probation Department, we have held regionals on Long Island each year. The Long Island Regional alone has

trained hundreds of law enforcement instructors in advanced use of force techniques.

The regional training program has accomplished the following goals and objectives for law enforcement firearms training:

1. Introduced new firearms training techniques including force-on-force training, auto pistol transition, low-light target identification and shooting techniques to name a few,
2. Brought many new active members into IALEFI®,
3. Helped recognize local firearms instructors and their programs as presenters on a local level and transported them onto the national stage.
4. The regionals have also exposed local firearms instructors to nationally recognized experts in this field. An example would be the Long Island regional inviting the following instructors, Dave Spaulding, Bank Miller, Chuck Taylor, Frank Repass, Lou Chiodo, Ken Murray, and John Meyer just to name a few.

Through the years I have received many letters from local firearms instructors thanking me for the opportunity to attend a training conference that has given them the opportunity not only to learn new techniques, but also to meet and exchange ideas with other instructors. If the A.T.C. is the Super Bowl of firearms training conferences, then the regionals are the Sunday games played around the country that lead to the Super Bowl.

If there is anyone out there who would like to host an RTC, please contact one of the two regional training coordinators - Captain Mike Boyle, region 1 and region 2 (609) 259-3347 and Sgt. Mike Dunlap, region 3-7 (603) 496-6957. In addition, the IALEFI® office can provide you with a regional training host's guide which among other things will let you know what region you fall into. **TFI**

2005 ATC



Manny Kapelsohn being attentive at one of the hotel lecture classes.



Lt. Jeff Hall, retired, Alaska State Troopers, presenting his class, "Finish the Fight."



[Left to Right] San Diego Deputy Sheriffs Rich Sigmund, John Groff, and John Pokorny.



[Left to Right] Attending the ATC banquet dinner: Scott Hawkins, Austin Texas Airport Police, and San Diego California Deputy Sheriffs Sigmund, Pokorny, and Groff.

Photos on this page were submitted by Jim Daniels.

Special thanks to everyone who helped make our 25th Annual Training Conference a success!



The scenic backdrop to the Reno Ranges.
Photo Credit: Jim Daniels



[Left to Right] Robert D. Bossey, present Executive Director; Michael P. Beckley, past President; Charlie Smith, IALEFI® Founding Father; Elizabeth Callahan, past Executive Director, Robert E. Hunt, past President; and Steve Johnson, present IALEFI® President



Todd Green, raffle recipient of a 25th Anniversary engraved Springfield Armory XD Pistol, graciously donating the weapon and presentation case to Kathryn Bossey, daughter of IALEFI's Executive Director, Bob Bossey, for her enthusiasm and help during the ATC.



Charlie Smith, center back row, IALEFI Founding Father, with the contingent from Hong Kong and China.



[Left to Right] Michael P. Beckley, past President; Charlie Smith, Founding Father; Elizabeth "Libby" Callahan, past Executive Director; and Robert E. Hunt, past President.

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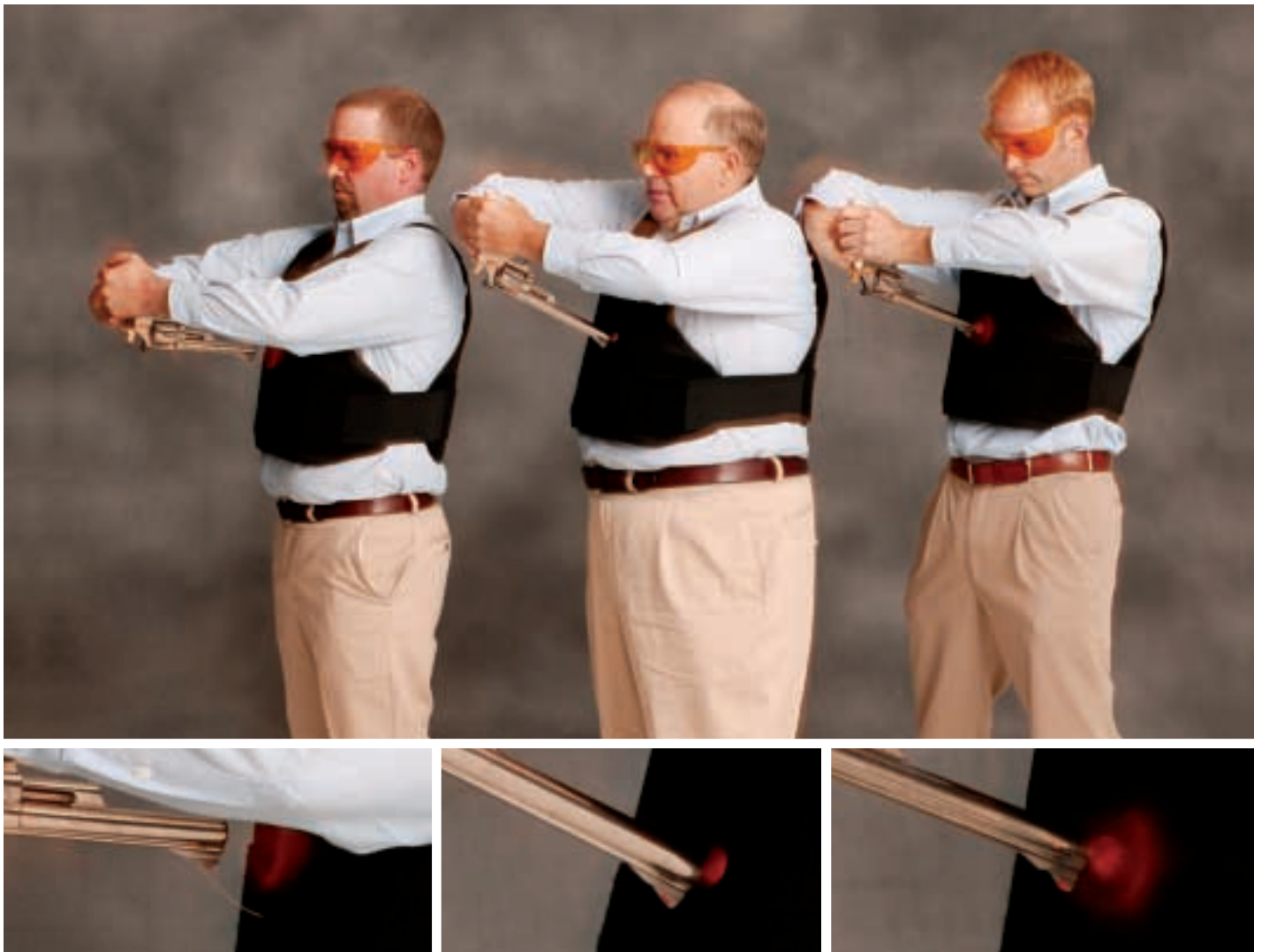
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STALE

AVOIDING THE BEER EFFECT

IMPROVING RETENTION OF LEARNED POLICE SKILLS

BY MICHAEL J. ASKEN, PH.D.

Instructors and trainers, as well as students and trainees, all recognize that a major challenge for them is not just mastering a skill, but *retaining* it. Much like beer (and unlike fine wine and cheese), unused skills do not improve with time, but, in fact, become stale and decline. However, there are certain principles and techniques that have been written about that can be integrated with training to improve the retention of skills over time and avoid the “stale beer effect.”

As long ago as the 1800's, psychological memory research demonstrated how quickly forgetting can occur. These early studies were concerned with what has been called *declarative* knowledge, remembering facts and terms, which for police officers may be like what constitutes a Terry stop. While this is important for police work and training, perhaps as important is the retention of *procedural* knowledge, which is remembering how to execute skills or procedures to complete a given task.

It has been reported that the forgetting or retention

of procedural skills is determined by several factors. The main factor is the number of steps or skills in the procedure. The more steps/skills involved, the more likely and the faster is the rate of forgetting.

The degree of “cueing” provided by each step/skill for the next one also influences retention. Steps/skills that cue or signal the next one (such as the releasing of an empty magazine cueing the insertion of a loaded magazine) are more resistant to forgetting. Memory devices such as “Tap, Rack & Go” for weapon jams are a means to enhance such cues.

The amount of variation allowed in the procedure is another factor. Procedures that allow some variation and don't have to be followed exactly may be better retained than those requiring an exact sequence in execution. For example, the sequence of “shoot and move to cover” can and may need to be varied depending on the situation. Finally the organization of the procedure affects retention with well-organized and logical tasks allowing easier recall.

Retention refers to remembering and retaining skills

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over some given time period by demonstrating the same skills under identical or similar conditions. (Skill *retention* is related to, but different from, skill *transfer* which is the ability to successfully apply learned skills in a new situation). In police work, retention is usually defined by the ability to effectively *perform* the skills rather than just recall or describe them.

There are several methods described by experts that can be used at the time of training to enhance retention. Some approaches may seem obvious or be well-known and already in use. Others may be less obvious and their consideration and incorporation into training can enhance the important goal of retention of skills.

Retention can be improved by increasing the original level of mastery or learning. This is essentially the principle that increasing the difficulty of the goal will require more practice and increased performance. This will have a further effect which is to increase retention, as well.

This is accomplished in training by raising the definition of "success". For example, if the criteria for qualifying on a pistol combat course is raised by 10% of shots on target, this will increase the amount of practice and performance needed and also improve retention. Another example might be increasing the number of errorless trials (performance without a mistake) needed for mastery, such as changing the success criterion from being simply the first errorless trial to a

requirement of three consecutive errorless trials. The demonstration errorless and efficient jam clearing three times in a row rather than just once is an application of this approach.

Overlearning can improve retention. Overlearning refers to additional practice and learning after success has been achieved (the goal has been met). This additional practice will improve retention more than quitting as soon as success is achieved. It should be noted, however, that the relationship between overlearning and retention is not perfect, meaning that 100% overlearning will not yield 100% improvement in retention, but will improve the retention to some degree.

Massed practice and spaced practice are other factors that can affect retention. Massed practice refers to completing all training/practice at one time. Spaced practice refers to providing training over several sessions (different days, weeks, etc.). Training in a skill for six hours on one day would be massed practiced. Training for two hours a day, one day per week for three weeks, is spaced practice.

Spaced practice improves retention compared to massed practice. It has been said that this is one of the most reliable findings of experimental psychology. It has been reported that massed practice may yield only 1/2 the retention of spaced practice.

The relationship of massed and spaced practice is an example of a paradox and conflict that exists when trying to maximize both learning and retention.

Approaches that enhance retention may inhibit original learning and vice versa. Spaced practice is just such a situation. While spaced practice is superior in promoting retention of skills, it does make the new learning of a skill much slower, does require much more training time and can create frustration on the part of trainees because of the slow pace of their progress. Thus, it is not surprising that spaced practice is used less than massed practice, despite the benefits that will come later.

Understanding the organization and need for specific skills in a task can improve retention. Teaching the “reason” or “logic” of the skills in task will be more influential on retention than merely presenting a sequence of steps for memorization. An example would be the jam-clearing procedure of “Lock, Rip & Run” used with training rounds to demonstrate the effects of failing to perform as instructed. This is called providing structural and functional explanations, not just a linear explanation.

Most police skills training already uses another technique that enhances retention; making the student an active participant. Active participation, rather than just sitting and listening or observing can aid retention. The effect can be further enhanced by using some form of “cooperative learning.” Small groups that work together towards mastery can improve retention. Having students teach or coach a skill to another trainee (under supervision to insure safe and correct instruction) can also influence retention. Having trainees provide each other with feedback on the effectiveness of their technique (such as handcuff take-downs or functioning as a safety officer during shotgun qualification) is such an approach.

A related approach which also favorably affects retention of skills is called the Generation Effect. This is much like the Socratic Method of teaching (named after Greek philosopher Socrates) where the instructor questions and stimulates the students to come up with answers in an ongoing dialogue. Information and concepts that result from (are “generated” by) trainees’ questions, responses and interaction are better retained than that that merely presented for study or learning. For example, having trainees “generate” what they think they need to do in exiting from vehicle cover to a barricade before being instructed in the required actions may aid retention. These last approaches have been summarized by the advice that in training “there should be less talking, presenting and demonstrating” and “there should be more answering, producing, and practicing”.

An obvious, but often overlooked principle is that the act of remembering (retrieving information) enhances future remembering (retrieving) of information. Retrieving information or demonstrating skill is typically done by giving a test. Giving tests not only assesses current level of performance, but also acts to improve future retention. Tests that are embedded in training not only provide feedback, they promote learning and retention after the test.

Refresher training sessions are another effective technique to improve retention. To maximize the effectiveness of refresher training on retention, it has been suggested that the training should occur at intervals equal to the expected non-use interval separating the times when the skills would be needed. For example, if incident statistics show that a given officer is likely to encounter a building or terrain search twice a year, then refresher training on such searches might be given every six months. Also rookies or novices should be given refresher training at the same intervals that professionals use the specific skills.

Of course, certain skills because of their critical nature should be “refreshed” more often than they are used. Shooting skills should be refreshed more than once a year, even though they may hopefully never be used.

Refresher training can be qualitatively different from the original training; this means the entire original training does not necessarily need to be repeated. Cues or reminders can be used to stimulate the previously learned behavior. The original learning conditions do not need to be identical either.

Finally, a psychological technique that can be used to enhance retention is performance imagery. This is essentially the mental rehearsal of skills or situations and is often written about related to police training and performance. However, it is crucial that instructors understand the nature and applications of performance imagery if it is to be used, as there are factors which affect how successful imagery will be. Performance imagery can be a helpful technique when actual practice is not possible due to any of many reasons such as lack of time, lack of access to equipment or sites, scenario availability, etc. Research shows that the psychological practice of skills can improve the actual physical performance.

The understanding of how to aid retention of skills is always changing, but the principles and techniques described can be useful in training. With awareness of such approaches and some creativity in instruction, time need not be the enemy of retaining skills. Stale beer and stale performance can both be avoided, though performance is clearly the essential concern. **TFI**

Special appreciation is expressed to Corporal Nolan Brewbaker and Corporal John Lowson for their comments in the preparation of this article.

About the Author

Michael J. Asken, Ph.D. is the Psychologist for the Pennsylvania State Police where he is involved with specialized teams and teaches at the State Police Academy. He is a certified instructor for the Municipal Police Officer’s Education and Training Commission. He has been involved with public safety personnel for over 15 years. Mike is the author of *PsycheResponse: Psychological Skills for Optimal Response by Emergency Responders*. Mike is on the Editorial Committee of *The Firearms Instructor*.

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MEDICAL BALLISTICS

BY MARTIN J. GREENBERG, MD, FAAOS, FACS

The purpose of this article is to discuss some aspects of the effects of projectiles on living tissue (terminal ballistics), gunshot wound protection and gunshot medical care.

BALLISTIC ENERGY TRANSFER

Ballistics is the study of bullets in motion. Subtopics include interior ballistics (bullet motion in firearms), exterior ballistics (bullet motion after leaving the barrel) and terminal ballistics (bullets' effect upon targets). For our purposes, wound ballistics is the terminal ballistic study of living tissue. Remembering high school physics, all objects in motion have *kinetic energy* that becomes *potential energy* as the object stops moving. Total kinetic energy of an object when moving equals its total potential energy at rest. A slowing object "gives off" its kinetic energy

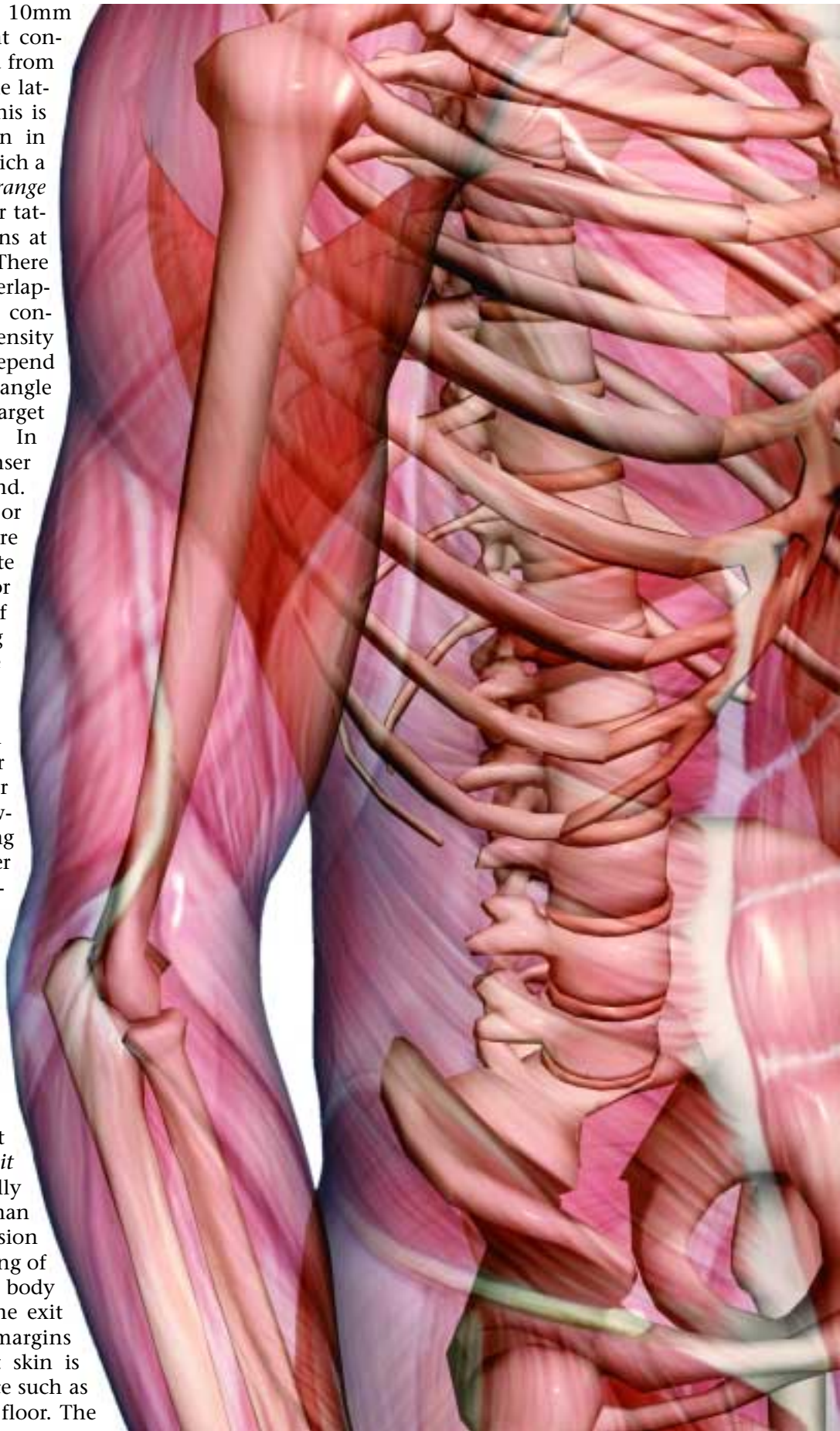
to its surroundings. A rapidly decelerating bullet “dumps” its kinetic energy rapidly into the object it strikes. The more kinetic energy almost instantly released, the more energy the target must instantly absorb. The amount of tissue damage imparted by a projectile is in part determined by its ability to transfer ballistic energy to living tissue exceeding that tissue’s ability to absorb it. Kinetic energy is defined by the formula: Kinetic Energy (K.E.) = 1/2 Mass (M) x Velocity (V) squared. This means that if the weight of the bullet doubles, so does the kinetic energy. When the projectile’s velocity doubles, its kinetic energy quadruples. *Kinetic energy is most dependent upon the velocity of the projectile.* Of course, the bullet must be able to come to rest within the target to impart all its kinetic energy. Dr. Martin Fackler, the “father” of wound ballistics, feels that projectile velocity 2000 ft./sec. is the threshold for “high energy” level tissue destruction. He pioneered the use of the 10% ballistic gelatin medium as having similar penetration characteristics as living tissue. If a round passes through the target making a small hole and continues to travel through several sheetrock walls in an urban setting, a dangerous situation arises. Considering the width of a possibly heavily clothed human torso, about 12-18” of penetration seems ideal to achieve maximal “safe” energy transfer. Depending upon the location of the entry wound and the path of the projectile within the body, different organs may be struck. The projectile’s effects will be directly related to the involved organ systems, their vascularity and anatomic characteristics (solid vs. hollow and liquid vs. air vs. bone consistency). The actual “hole” the bullet makes throughout its trajectory through the body is called the *permanent wound channel*. However, the projectile is actually pushing tissue away from it as it imparts its kinetic energy creating *temporary cavitation* that has a lifetime of only 5-10 msec. The size of this temporary cavity and the effect of its accompanying shock wave on surrounding tissue depend upon the amount of kinetic energy transferred and the local tissue’s elasticity and cohesiveness. *Low velocity* rounds (most handgun rounds) lack the ability to expand tissue beyond its elastic limit. *High velocity* rounds (most centerfire rifle rounds) impart adequate energy to exceed local tissue’s elastic limit and cause the tissue to “explode” or shatter. This is one reason for the explosive effects caused by high velocity, limited penetration ammunition. Dramatic local occurrences when centerfire rifle rounds enter tissue include “tail splash” where tissue is violently driven backwards, the formation of a temporary cavity up to 30 times the diameter of the permanent cavity, undulating local pressures of up to 200 atmospheres (atm.), the sucking into the wound of foreign matter, and damage to distant vital structures including blood vessels, nerves, and even bones. Density and elastic cohesiveness of involved organs are other important wounding factors (DiMaio, *ibid.*, p.

43). For example, DiMaio states that muscle and liver have about the same density. Liver, however, has much less elasticity or cohesiveness than muscle. A projectile traversing muscle will leave only a permanent wound channel while one traversing liver will create an explosive effect similar to shooting a gallon plastic water jug. Lung, being highly elastic, may sustain only little damage by a traversing projectile. Minimum critical velocities of 2625 to 2953 ft./sec. are associated with supersonic wound shock waves and the large temporary cavities noted above. Each bodily tissue may have a unique level of kinetic energy needed to exceed its elastic limit creating explosive effects. Bullet factors also affect the loss of kinetic energy. Yaw, or “the deviation of the bullet from its line of flight” (DeMaio, *ibid.*, p.46), will increase the amount of tissue contact with the projectile and cause tumbling within the target. The high velocity bullet may also fragment in predictable ways as tumbling deceleration strains the bullet to its failure point, increasing the energy dump and wounding effects through multiple projectile paths. The caliber, shape and construction (jacketed, semi-jacketed, or lead projectile) will also play a role. The critical speed for hollow-point expansion varies but starts at about 705ft./sec. (Bruchey, W.J. et al., Police Handgun Ammunition, US Gov’t. Printing Office, 1984). Shotgun rounds create high velocity wounds as the multiple pellets and packing from any gauge shot shell create a contaminated wound requiring debridement. In the most common shotshell, 00 (double 0) buck pellets measure .32 caliber. Shot patterns generally disperse 1”/ft. of travel from the muzzle. More pellets on target mean more wounding effects. As a 12 gauge round will have 8-12 of these pellets, imagine being shot with 8-12 “00” .32 caliber bullets simultaneously! Shotgun slugs (12 gauge = .70 caliber) create a low velocity injury pattern.

ENTRY AND EXIT WOUNDS

Gunshot wounds may be penetrating or perforating. Perforating wounds exit the target. In *contact wounds*, the muzzle of the weapon is in hard or soft contact with the skin. In hard contact wounds, the skin under the muzzle is tattooed. In soft contact wounds, gas escapes around the muzzle creating a ring of removable soot. *Angled contact wounds* have an oval configuration and a radial, fan shaped, soot pattern on the side opposite to the muzzle. The radial soot is temporary as in light contact wounds. Incomplete contact wounds occur when the muzzle is in complete contact with the skin. Gases and soot then escape radially through the muzzle/skin gap. Microscopic elements from all parts of the cartridge are found within the permanent channel. *Near contact wounds* occur when the muzzle is close to the skin. They have a baked-in, tattooed appearance with a temporary surrounding soot ring that may be radial if the trajectory is angled. Here, the radial soot ring points *towards* the muzzle. This is the case when

the muzzle/skin gap exceeds 10mm (DeMaio, *ibid.* p.57.) Angled light contact wounds may be differentiated from angled near contact wounds as the latter has a tattooed component. This is an important forensic distinction in discovering the direction from which a bullet was fired. *Intermediate range* wounds exhibit the classic powder tattooing pattern. This pattern begins at about a 10cm. muzzle/skin gap. There is therefore a continuum of overlapping wounds patterns from hard contact to intermediate types. The density and distribution of tattooing depend upon many factors including the angle of trajectory, the quality of the target skin, and overlying clothing. In angled shots, the tattooing is denser on the "muzzle side" of the wound. Tattooing is colored red, orange, or brown and is an *antemortem* (before death) finding. These are punctate abrasions, *not burns*, and their color is due to the body's reaction of bruising or bleeding. Shooting dead people at an intermediate range results in a gray or yellow powder tattoo. Tattooing is permanent and does not occur on palms or soles. The term "powder burn" refers back to black powder wounds where the deposited powder actually burned the skin setting overlying clothing ablaze! Neither powder tattooing nor soot deposition will occur beyond a muzzle/skin gap of about 30cm. With *distant* wounds, only the mechanical action of the bullet on the skin will occur. *Entry wounds* are characterized by a red abrasion ring surrounding the bullet hole. A fresh abrasion ring appears moist and granular. Eccentric abrasion rings do not describe a bullet's trajectory. *Exit wounds* at any distance generally appear larger and more irregular than entry wounds. They lack an abrasion ring. The deformation and tumbling of a non-stabilized projectile in the body explains the irregular shape of the exit wound. Abraded exit wound margins may rarely occur when the exit skin is braced or "*shored*" against a surface such as sitting in a chair or lying on the floor. The



bullet's shape also does not correlate with the size of the exit wound.

“ONE SHOT STOPS”

The search for the “magic” handgun round that will produce instant incapacitation if fired anywhere near an individual has been the subject of great debate over the last 20 years. A nationally celebrated firearms trainer (Clint Smith, the Director of Thunder Ranch, Mountain Home, Texas) put the entire debate into focus by stating, “The purpose of a handgun is to fight your way back to your long gun”. Handguns are convenient and portable but may not always be effective man-stoppers. In 1992, Evan Marshall and Benton County, Indiana Sheriff’s Department Cpl. Ed Sanow published the seminal work *Handgun Stopping Power* (Paladin Press, Boulder Colorado 1992). Here, they assembled a large number of actual, well documented shootings organized by handgun load and determined what percentage occurred through “one shot stops”. The actual mechanism of the stop or its fatality was not always documented.

The “best of class” for each <i>caliber</i> revealed:	<i>one shot stops</i>
.380 ACP-Federal 90-gr. JHP:	65%
.38 Special (2” barrel)-W-W 158-gr. LHP+P	67%
.38 Special (4” barrel)-W-W 158-gr. LHP+P	75%
9mm. (all types)- Federal 9mm. 115-gr. JHP+P+	89%
.357 Magnum-Federal 125-gr. JHP	97%
.44 Special-Federal 200-gr. LHP	72%
.44 Magnum-W-W 210-gr. STHP	89%
.45 ACP- Federal 230-gr. Hydra-Shok	91%

Steve Fuller created a computer program with this data dubbed “the Fuller Index.” He predicted that a round with a kinetic energy of around 650 ft./lbs. could be expected to produce a one shot stop. This, of course, was a statistical analysis that ignored other factors. Almost no duty handgun rounds have this much K.E. Pre-fragmented light, fast rounds such as some Mag-Safe rounds or Glaser Safety Slugs possess this level of



kinetic energy but to our knowledge these brands are not standard issue law enforcement duty ammunition in Illinois.

.223 rifle rounds were studied anecdotally by Sanow who opined that one shot stopping power was in the high 90% range. Penetration to the “ideal” 12-18 inch depth and “good” bullet fragmentation characteristics occurred (varying with the specific .223 round.) Since most handgun rounds do not penetrate body armor and have inferior ballistics compared to the .223 (5.56mm) or the new Fabrique Nationale (FN) 5.7mm round, one wonders why we see so often see tactical entry operators deploying with a pistol caliber handgun as their primary weapon.

BALLISTIC GUNSHOT WOUND PROTECTION

“Ballistic body armor is designed to defeat projectiles in motion (Second Chance Live Fire Demonstration Notes presented by Lt. A. Kulovitz {Cook County Sheriff’s Police, retired}).” The National Institute of Justice (N.I.J.) has defined ballistic vest threat levels designed to defeat specific rounds. Soft body armor is made from polyethylene fiber (Spectra made by Allied Signal Company,) Aramids (Kevlar made by DuPont, and Twaron made by Azko-Nobel.) Soft body armor is basically a ballistic resistant fabric available as concealable or tactical armor. The following threat protection levels are available for soft armor. *Threat level IIA* must defeat a 9mm. full metal jacketed Remington (9mm. FMJ Rem) fired from a 4” barrel traveling at 1090 ft./sec. and a .357Mag. 158gr. semi jacketed soft point Remington (.357 SJSP Rem) fired from a 4” barrel traveling at 1250 ft./sec. Other non-mandated rounds this threat level stops include most non-FMJ 9 mm. rounds, the .45 ACP, several .44 Magnum rounds and 12G 00 buckshot. The next higher threat protection level, designated *level II*, stops the mandated 9mm. 124gr. FMJ Rem fired from a 5” barrel traveling at 1175 ft./sec. and the .357 Magnum 158gr. SJSP Rem fired from a 6” barrel traveling at 1395 ft./sec. (note increased velocity when a round is fired from a longer barreled weapon.) Non-mandated rounds include 12G shotgun slugs, a variety of 9mm. FMJ rounds, and even the .50 Action Express bullet. *Threat level IIIA* stops the mandated 9mm. 124gr. FMJ Rem fired from a 16” barreled carbine traveling at 1400 ft./sec. and the .44 Magnum 240gr. SWC GC Rem. fired from a 6” barrel at 1400 ft./sec. Hard armor inserts usually made of steel, ceramics, aluminum or titanium are available for added frontal torso protection for this soft armor. More exotic armor plating in Silicon Carbide, Boron Carbide or Cermets (ceramic/metallic combinations) also exists. Hard armor is available as a threat level III and protects against center fire rifle rounds 5.56 x 45mm (.223) and 7.62 x 51mm (.308). It is also available in level IV protecting against the 30.06 AP (armor piercing) round. Fragmentation armor (FLAK Jackets) protect against shrapnel injury but are not officially ballistically rated.

Puncture resistant vests are designed to defeat edged weapons.

Ballistic vests are not edged weapon resistant unless so specified!

Reviewing Second Chance compiled statistics makes the obvious case for wearing a ballistic vest. FBI stats show that *the odds of surviving a shootout are 14X higher if body armor is worn.* These data also show that between 1980-1996, *42% of the 403 officers killed with firearms could have been saved were they wearing body armor.* 88% of all law enforcement officers were shot with bullets that would have been defeated by soft armor.

The data shows that routinely wearing a light, comfortable vest is far wiser than not regularly wearing a heavier, uncomfortable, more protective vest.

When on duty, wear your ballistic vest at all times!

CENTRAL NERVOUS SYSTEM (CNS) INCAPACITATION

Injuring vascular (blood containing) organs such as the heart or liver, or disrupting major blood vessels such as the femoral or carotid arteries will result in major blood loss and **rapid incapacitation** within 10-15 seconds because of *hypovolemic (blood loss) shock* (Plaster, John-The Ultimate Sniper, Paladin Press Boulder, Colorado 1993 p.131). A low or high velocity gunshot injury to the Central Nervous System (CNS) above the shoulder blades, in the brain stem or within the cranial vault when properly placed may result in

instant incapacitation. The rule of thumb for CNS incapacitation is "the higher on the spine the better...the subject goes down precipitously as if you'd flicked a light switch (ibid. p.131)". This describes **neurogenic (nervous system) shock** and is the goal of the precision marksman. To achieve this result, the brain stem at the *pons, medulla oblongata or upper cervical spine* level must be severed or the cranial vault must be breached preferably by a high velocity round. The landmark for the medulla is in the "moustache" area just below the middle of the nostrils (nares) on the front view of the face. The landmark for the back side of the head is less distinct. It is a line drawn between the bottom of the earlobes (tragus) in the midline of the head. A low velocity round may also be effective within the cranial vault but striking the frontal cortical motor strip assures the desired result. The landmark for this structure is located starting above top of the ear (pinna) and extending toward the top of the head on its side view. Major John Plaster (Special Operations Group, ret.) likens this area as similar to the area covered by wearing headphones. Only the

upper 1/3 of the head contains the cranial vault and brain. The liquid density of the brain accurately reproduces the effects of shooting a gallon water jug and transmits the temporary cavitation shock wave very well. This area is about 4-5 inches high and 6 inches



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wide. Intracranial gunshot wounds comprise 1/3 of all fatal shootings (Op cit., DeMaio p.217). The entry wound punches out a relatively round skull fracture that drives bone fragments into the brain. High or even low velocity rounds may create shock waves causing secondary skull fractures. Intracranial bullets may ricochet 10-25% of the time within the cranial vault also creating fractures and/or more brain parenchymal (tissue) damage. Increased intracranial pressure because of bleeding or swelling may be a partial explanation for the devastating nature of these wounds. DeMaio states that 40% of fatal civilian gunshot wounds involve the head (50% involve the heart and great vessels while 10% are miscellaneous). Bullets may follow the inner curvature of the cranial vault before coming to rest. A skull x-ray is always a good idea to document bony injury. The author has had personal experience with a head wound where midline anteroposterior entry and exit wounds were present in a lucid victim with *no* skull fracture demonstrating the tendency of bullets to track along the bones of the skull. The size of the permanent cavity within brain tissue bears no resemblance to the caliber or kinetic energy of the round. The time needed for "instant incapacitation" may be calculated, per Plaster, to be approximately .12 seconds for a .308 round to travel 100 yards from the weapon to the subject and another 1/2 millionth second to divide the brain stem.



The realistic marksmanship ability to accomplish these shots is a relevant question. If an acceptable level of marksmanship accuracy is 1 Minute Of Angle (M.O.A.) or 1 inch off target/100 yards, it would be impossible to make the cranial vault shot beyond about 300-400 yards. As most tactical scenarios occur within 75 yards, this shot may be a realistic goal. The ability to successfully make a brain stem shot is more questionable. As the angle of elevation increases, the trajectory may miss the medulla with an elevation angle of only 5 degrees although the pons (lower brainstem) and upper spinal cord could still be struck successfully if the shot remains midline.

GUNSHOT WOUND MEDICAL CARE

Despite the foregoing analysis, do not despair. Actually, only about 10% of gunshot wounds are fatal. Gunshot victims, if conscious, should be reassured they won't die. It is important to avoid the pessimistic mindset that you will die if shot if for no other reason than if you stop fighting you really may die. If injured, don't be sad-get mad! No one should be allowed to take you from your family and loved ones! If you make it to a Trauma Center, you have a 98% chance of survival.

The first priority in providing TEMS care to the civilian or law enforcement gunshot victim is to search and completely disarm them! For officers, this includes all primary, secondary and backup firearms. The weapon search includes edged weapons. Do you know where all your tactical *and* TEMS team members secrete all their weapons? Unarmed, injured medics will still have knives on their person. An injured, disoriented team member may think he is being attacked by the treating medic or tactical team mate and respond violently. If (s)he is not disarmed, further unnecessary injury may result.

The victim should be evacuated to a safe location for care if possible. The bare minimum care in the inner perimeter should be provided including a quick A,B,C (Airway, Breathing, Circulation) first aid evaluation. A wound dressing may be applied as needed. An ambulatory victim may walk to safety. A non-ambulatory victim may be carried into the "cold zone" via a carry technique or a litter. Extremity low velocity wounds are treated with a sterile, compression dressing. If tendon, nerve, or bony injuries are present, splint the extremity appropriately. Injuries above the wrist or ankle require full extremity splinting. Most extremity bleeding can be controlled with direct pressure. The use of arterial pressure points should be considered if this primary treatment fails. Topical hemostatic agents are new on the medical scene and should be considered when simple modalities fail. The use of a tourniquet is not included in most EMS Regional Medical Standing Orders (MSOs). An MSO waiver will usually need to be obtained to include this treatment modality in the medical armamentarium. It is our opinion that applying an extremity tourniquet is *not* equivalent to sacri-

ficing the extremity. The author (M.G.) is an orthopedic surgeon who, over 28 years, has seen many extremity arterial injuries requiring a tourniquet to control bleeding. Tourniquets are routinely used in extremity surgery. Arms can well tolerate 1 1/2 hours of tourniquet use. Legs can similarly tolerate up to 2 hours of no arterial inflow. Tourniquets should be wide enough to prevent local compressive tissue damage and must be strictly monitored by the person who applied them! Careful and *available* documentation of tourniquet application reasoning, time and associated care must accompany the victim. Religiously respect tourniquet time limits. If you apply an extremity tourniquet, consider yourself the patient's conjoined twin until it is removed!

Remember, the survival rate after sustaining a gunshot wound is 90%!

AVOIDING GUNSHOT TRAINING INJURIES

There truly are no "accidental discharge" firearm injuries. All unintended shootings are the result of human error and are therefore avoidable. The correct term for an unintended firearm discharge should be a "negligent" discharge. One's brain is the most effective firearm safety. Following **the National Rifle Association's (NRA's) Four Rules Of Firearm Safety religiously** should theoretically eliminate negligent discharge firearm injury. They are:

- 1. Keep your weapon pointed in a safe direction until you are ready to fire it.**
- 2. Keep your finger off the trigger until you are ready to fire the weapon.**
- 3. Do not point your weapon at anything you are not willing to destroy.**
- 4. Know your backstop and what is beyond it (will the ballistic characteristics of your rounds allow them to travel beyond the intended target? www.NRA.org/NRAgun-safety.rules.)**

In training settings, protocols to eliminate live rounds should be developed and religiously adhered to. All training participants should be searched (or re-searched) upon entering the facility. All weapons should be verified as completely unloaded, be taped for identification and have a brightly colored cord or device rendering the chamber non-functional. No magazines should be in any training weapons. Blank pistols should probably not be used as barrel plugs have been reported to discharge projectiles.

SUMMARY

Understanding ballistics requires an understanding of kinetic energy transfer and the difference between low and high velocity gunshot injuries. The medical care of these two categories of gunshot trauma differs greatly. Rifle and shotgun wounds always require surgical debridement while low velocity handgun wounds

“Medics and tactical officers should religiously wear their tactical ballistic vests and helmets to all training sessions and callouts. Patrol officers should always wear their duty vests when at work.”

are not considered “open” injuries (including fractures) and do not automatically require debridement.

Immediately disarm the injured operator of all firearms and knives including secondary and backup weapons (know where they are)! Make the weapon(s) safe by *completely* unloading them.

Have a firearm catch (pouch) available to store the unloaded weapon(s).

Extremity wounds require a sterile compression dressing and an appropriate splint if needed. Torso wounds require a 3-sided dressing and possibly thoracic needle compression. Abdominal wounds require a sterile dressing. Most gunshot injuries are “load and go” scenarios. Extremity wounds should be appropriately dressed and splinted.

Minimal fluid replacement is generally the rule. Start I.V.s and perform the secondary survey during transport. Accompany the injured operator to the emergency room if possible. Communicate well with the treatment facility. Be an *ombudsman* (facilitator) for the team and their family members. Consider the psychological effects at play and provide encouragement and support.

Prior to rendering medical care, consider the medic’s safety. The order “Medic Up!” should not be given by the tactical commander if the medic is placed unnecessarily in harm’s way. It is the medic’s ultimate responsibility to assess the inherent risk of providing care in

the tactical environment. Creating a second gunshot victim is *not* the goal of tactical medical care. *The medic’s on scene assessment of an unacceptable risk is an affirmative defense for the denial of TEMS services.*

If one is shot, the odds of survival are 90%. Don’t be sad, get mad and never quit fighting! A confused officer may fight the medic attempting to help him. The medic should be aware of this possibility and act accordingly.

Medics and tactical officers should religiously wear their tactical ballistic vests and helmets to all training sessions and callouts. Patrol officers should always wear their duty vests when at work. Wearing concealable body armor off duty is optional. Latest generation body armor is so light and comfortable that its periodic off duty use should not be dismissed out of hand.

In training, the use of blank firing pistols should be reconsidered because of reports of barrel plugs acting as projectiles. No live ammunition should be allowed in the training facility and all participants should be searched for inadvertent live rounds on their person or in their weapons. All weapons should be unloaded and taped after inspection. They should be magazine free. Brightly colored chamber blocking devices are helpful. Any one leaving a training scene should be searched again upon re-entry.

The most effective “safety” mechanism is one’s brain. No firearm discharges “accidentally”. All unintended discharges are negligent and can be avoided. Religiously follow the Four Rules of Firearm Safety when in control of a firearm.

We should do everything within our power to eliminate negligent discharge and friendly fire ballistic injury. If the unthinkable should occur while on duty or in training, an understanding medical ballistics and prompt execution of the first aid skills we have discussed may save a life. **TFI**

About the Author

- Chief, Section of Hand Surgery, Illinois Masonic Medical Center - Chicago, Illinois
- Clinical Assistant Professor of Orthopedic Surgery, University of Illinois
- Co-Chair, Illinois Tactical Officer’s Association TEMS Committee
- Executive Committee Member, Illinois Medical Emergency Response Team
- Director, Regional Medical Emergency Response Team, Chicago
- Training Director, South Suburban Emergency Response Team (SSERT),
- Special Tactical Assistance Trauma Team (STATT)
- Reserve Police Officer, Village of Tinley Park, Illinois

WE'VE IDENTIFIED THE ENEMY,

IT IS US!

BY ROBERT D. BOSSEY
IALEFI® EXECUTIVE DIRECTOR

On Tuesday, September 13, 2005, Officer Tara Drummond, age 23, of the Kennesaw, Georgia, Police Department, was accidentally shot and killed while attending training at the North Central Georgia Law Enforcement Academy. Tragically, she was shot during a firearms training session when the instructor's firearm discharged as he was performing a demonstration. Officer Drummond was transported to a local hospital where she succumbed to the wound. This catastrophic incident was the catalyst for the article which follows.

Yet another "accidental" or "unintentional" discharge of a firearm that takes another life. This time, a young female recruit officer died from a round discharged "unintentionally" from a weapon in the hands of a veteran, "firearms instructor." How tragic!

Let's take the gloves off for a minute and place our egos on the back burner so they don't get in the way of pure logic.

First, I know of no firearms instructor who while preparing for a class says to himself, "Gee, I hope today is the day I take a student's life and drastically and negatively change the lives forevermore, of so many around me." Let's face it, unintentional means just that, unintentional. It does not mean, however, that it was not preventable. That's the truth of the matter, like it or not! Modern firearms are truly engineering

masterpieces that have evolved over time. So many intricate parts coming together at the correct place and time to make the weapon function. We all believe in the mechanics of firearms. Otherwise, we would not have the trust in them to not go off on their own while holstered on our hip. With few exceptions, if they have been left alone as designed and not modified in some fashion, they are dependable and reliable mechanical devices. I do not know of any firearm that was not engineered to function when you pull the trigger. That's what guns do! You take a firearm, charge it, and place it on the table and leave it alone, it will sit there for eternity and not discharge. However, you add the human factor who picks it up and pulls the trigger, IT WILL GO OFF! That's what guns do!

Now, again keep our collective egos out of the way

Continued on next page

and look into our other fallacy, and that is that we, as firearms instructors, are safe. We're not. We are, however, human, and when you add that element to the fact that we handle firearms all the time, we get complacent. Why? Because we become comfortable, and when we get comfortable with anything, anything at all, we take shortcuts. Think back when you first received your drivers license. For several weeks you probably stopped, not rolled through stop signs, you used directional signals, and you were aware of your speed and surroundings. However, once you had some miles under your belt, those things that you concentrated on so diligently, went by the way-side. Why...? You became comfortable. Remember this, "Any attribute which you overextend, becomes a deficit!" Enough said. Never become so comfortable with anything that you lose your respect for it. Complacency can have many names, don't allow it to have yours attached to it. Remember, if you're comfortable with firearms, then you have the opportunity, as we all do, to be dangerous with one.

I've been around firearms all of my adult life, I grew up with firearms around me, I was heavily exposed to all types while in the military and in Vietnam, and for the last 35 years in law enforcement. Therefore, I think I can speak with relative authority that of all the accolades we all like to strive for, the one I would like to be remembered by is merely, "safe." Not an expert, not tactically sound, not a warrior, merely, "safe." I'm not professing to be holier than thou, I don't live in some sterile bubble, and I make mistakes every day. However, every time I pick up a firearm I know exactly what that mechanism is designed to do with my help, FIRE! Therefore I think I can safely say, "We've identified the enemy, it is us." I've found myself at the business end of a firearm many times over the years. I never liked it. If I've bruised someone's ego, then so be it. However, if I've made you angry enough to stop and think every time you handle a firearm, then I've accomplished what I set out to do. When a tragedy happens of this magnitude it's easy to assess blame on others. In reality, it's all our blame. We should be strong enough in our beliefs, minus our own egos, to say something when the very basic rules of firearm handling are abused by those around us. Take corrective action, immediately, regardless of whether the individual is new to the business, or what we like to label as a veteran instructor. By and large, it's our own personal egos that will allow us to sometimes bite off far more than we can chew, or go down a path that we know is wrong.

It's time we stop what we're doing, collectively, and return to the very basics of handling firearms. We can't be too safe, even if it annoys those around us. It should be our constant mantra.

My heart goes out to the latest preventable loss. One died from this tragedy, another will never be the same for the rest of his life. Let's all do something about this needless loss of life. Expert, tactical, advanced, distinguished, master, the terms go on and on. Let's concentrate on merely one term, SAFE! **TFI**

Tara's friends and family are building a park in Paulding County, Georgia in her honor. If you would like to contribute to the Tara Drummond Memorial Park fund, you can make a donation by mail to the following address:

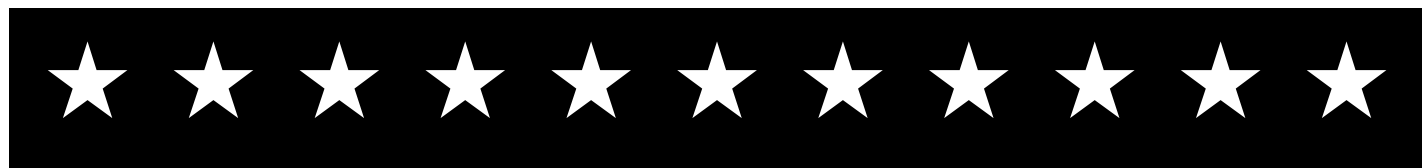
*Tara's Memorial
PO Box 299
Dallas, GA 30132*

For more information, visit their website at:

*www.taradrummond.com, or email them at
tara.memorial@comcast.net.*



Officer Tara Drummond



THE CHANGING ROLES OF FIREARMS INSTRUCTORS



A recent Associated Press article published in the aftermath of Hurricane Katrina, the storm that struck the Gulf Coast in August of 2005, reported that the responsibilities of the US Coast Guard have changed and expanded dramatically in light of that devastating event and others over the last few years. Instead of just focusing on search and rescue missions, the Coast Guard, the largest agency within the Department of Homeland Security, now has a multitude of duties. Prior to September 2001, the agency primarily had law enforcement roles; including ship boardings, drug interdiction, and environmental-type functions. The events of September 11, 2001 expanded their role to include anti-terrorism functions as well as armed-foreign ship searches of vessels entering our US ports. As a result of Hurricane Katrina, the Coast Guard's roles have again been expanded to include not only port security, but also ship tracking, building security, satellite mapping, running medical centers and shelter operations, in addition to law enforcement and anti-terrorism duties. A few boarding team personnel even undergo airborne training. Now you might be saying to yourself, "What does all this have to do with firearms training?" Well, in the last several years, our roles as firearms instructors have also changed significantly. Instead of just training officers in the safe and proper use of handguns and long guns, we, as professional trainers, now have to be well versed, and both capable and willing to train our charges in an assortment of force tools. It wasn't all that long ago that pump-action shotguns were brought back into the police arsenal to accommodate less-lethal beanbag rounds. Urban patrol rifles can now be found in more

than a few squad car trunks in many major cities.

It is no longer enough to be an expert just in the basic fundamentals of pistol craft, patrol rifles and/or beanbag shotguns. Today's police firearms instructors need to have a working knowledge of all use of force topics. Indeed, the psychomotor skills needed to deploy the Taser (or other pistol-type electronic weapons) are virtually identical to those of proper handgun use. The skills needed to escalate up the Control (or Force) Continuum from Presence and Dialogue into the Intermediate Force range, also have to include the realization that officers might need to move quickly from the I- (or interview) stance into empty-hand control techniques. Likewise, the body mechanics needed to escalate up from pepper spray deployment to impact weapons are also something that we as firearms instructors are going to have to think about and be able to address. The well-rounded firearms instructor should also have a good thorough background in the area of critical incident aftermath or what the old-timers called post-shooting trauma. Indeed, our roles as firearms instructors are changing to one of all-around *force* instructor.

PERSONAL ASSESSMENT

Within the broad spectrum of use of force issues,

today's professional police firearms instructor must be able to articulate why the need for deadly force is (or was) necessary. Testimony before department shooting boards, civilian review panels, and even Grand Juries have now become a frequent part of our jobs. In other words, the task of just training our officers to survive

the *street* has also been expanded to teach them how to survive the *courtroom*. Today's trainers have to be thoroughly versed in what legal risks might await officers who make improper force decisions; such as federal civil rights suits, state negligence claims as well as administrative internal affairs investigations. In order to do that, these instructors must have a comprehensive background in the other lower (or less-lethal) force tools today's street cops are being issued. Without causing a little angst among those administrators who might be reading this article, it probably would be a very good idea to consider conducting a needs assessment with your agency's firearms staff and begin to think about cross-training all your firearms instructors to include the other force disciplines. Most agencies that have adopted electronic weapons

have tasked their firearms staff with the responsibility of implementing those devices into the force repertoire. But how about cross training those personnel into the area of defensive tactics, impact weapons, and chemical agents; or vice versa, consider introducing

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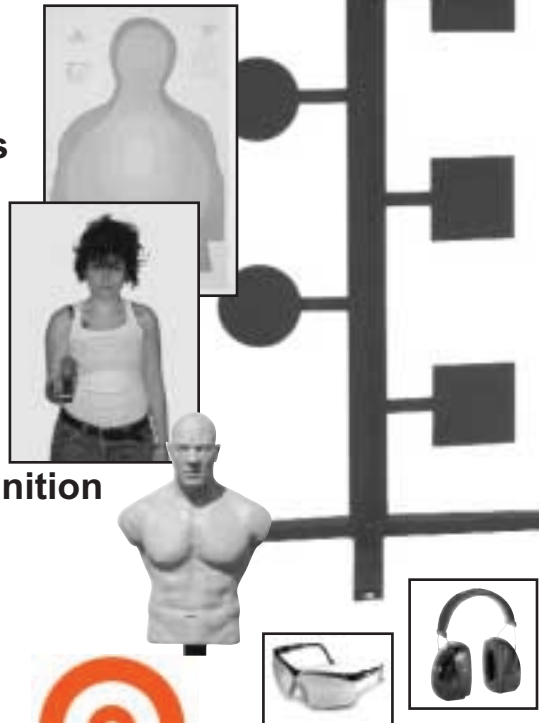
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your defensive tactics and impact weapon staff into the world of smokeless gunpowder and high voltage? Is this going to put a strain on the training budget? Initially, it will. But starting now with this process will probably, in the long run, save the agency money in training time. A two-day (16-hour) or three-day (24-hour) in-service training period can incorporate entire scenarios that encompasses several use of force issues; firearms, defensive tactics, impact weapon, pepper spray and Taser re-certification. With the trainers being versed in the proper application of not only deadly force, but also lesser force options, the student's behavior can be assessed in a much more complete manner, rather than simply looking at marksmanship or whether the discharge of the pistol was justified. Answers to questions on proper verbalization, cover/concealment, Taser use can be answered. Issues of pepper spray concentrations (5%-10%), impact weapon striking zones (red, yellow, green), handcuffing (behind the back, double locked) and ground fighting techniques and weapon retention issues can all be evaluated from the perspective of the big picture, rather than dividing each force option into two, three or even four separate sessions.

CONCLUSION

From a training standpoint, adopting this complete use-of-force instructor concept may seem like creating

the Ultimate Fighting Machine; but in today's litigious climate it is a topic that needs serious consideration. Organizations like our own IALEFI®, or the American Society of Law Enforcement Trainers (ASLET), or the International Law Enforcement Educators and Trainers Association (ILEETA) can be excellent resources for beginning this process. Just as the US Coast Guard Academy is cross training their officers to keep up with its ever-changing job description in the fight to keep our nation's waterways safe, law enforcement firearms instructors must also expand their roles to keep up with the ever-changing force options and tools today's police officers are being provided with to battle modern street crime. **TFI**

About the Author

Dave Grossi is a retired police lieutenant from upstate New York. He is one of only a handful of judicially-recognized use-of-force experts who hold instructor credentials in virtually every force discipline including firearms, defensive tactics, impact weapons, chemical agents, electronic weaponry, handcuffing and weapon retention skills. He also has an advanced certificate in critical incident stress debriefing. He is a long-time IALEFI® member and has been a past presenter at the Annual Training Conference.

IALEFI® MEMBER FEEDBACK

Greetings,

I am submitting some feedback in regard to the article penned by Vance McLaughlin [*issue 39, page 38 "The False Promise of the Law Enforcement Officers' Safety Act of 2004"*]. I don't know where his mind set was when he wrote the article but he missed the intent of how LEOSA applies to those qualified officer's. The bottom line and the intent of the law, if you qualify, is the ability to carry a concealed firearm anywhere in the United States, to provide safety to the officer and his family outside of his/her jurisdictions, period. Nowhere in the law does it say you are a cop from Chicago on vacation in Miami and you act in the capacity of a cop in the event there is a criminal act in progress. Most law enforcement professionals know that when they are out of their jurisdictions they become good witnesses to a crime in progress. Mr. McLaughlin states that the law is dangerous that the law enforcement officer has a high demand to become a "bodyguard" because they can carry a gun legally to protect some dirtbag drug runner. Wake up Mr. McLaughlin, drug runners already have a gun to protect themselves. Remember, they got the gun illegally and don't follow the letter of the law anyway. How dare you lump law enforcement professionals into a compromising category. I know of no PH.D's, as you say you are, in history, that have committed any crimes against society in the perfect vacuum world you live in.

Sincerely,
Officer William Katzing

AIMING FOR INSIDE THE SKIN

BY OFFICER L.A. HAMBLIN

Recently I had the pleasure of speaking with Dr. James Williams who is not only a practicing physician but also an accomplished shooter and firearms instructor. Our discussion led to the idea of using what most refer to as “realistic targets” when teaching the center of mass. The discussion led us to the concept of teaching center of mass and target selection. For example, the preferred shooting area for Target A (opposite page) may be the upper thoracic area. However paper targets are one dimensional, not to mention leaving the true desired shooting area left up to the shooter’s imagination.

Typically most realistic, weapon holding, adversarial-style targets depict the suspect squared off and facing the officer. Some targets provide a profile and some with the suspect’s back bladed toward the officer.

Balloon centered cardboard box-style targets covered with t-shirts are often used as an alternative to standard flat targets. Humanoid targets made from rubber and plastic targets are useful, providing one has a range that can accommodate these targets.

If a range is only capable of utilizing standard targets and frames, a viable option is to introduce a more anatomically correct target similar to Target B (opposite page). Painted target covers representing parts of the human anatomy could also be utilized to define a more desirable aiming point.

Particularly for inexperienced shooters, these types of targets provide an inside-the-skin visual reference which brings more meaning to the shooter in terms of

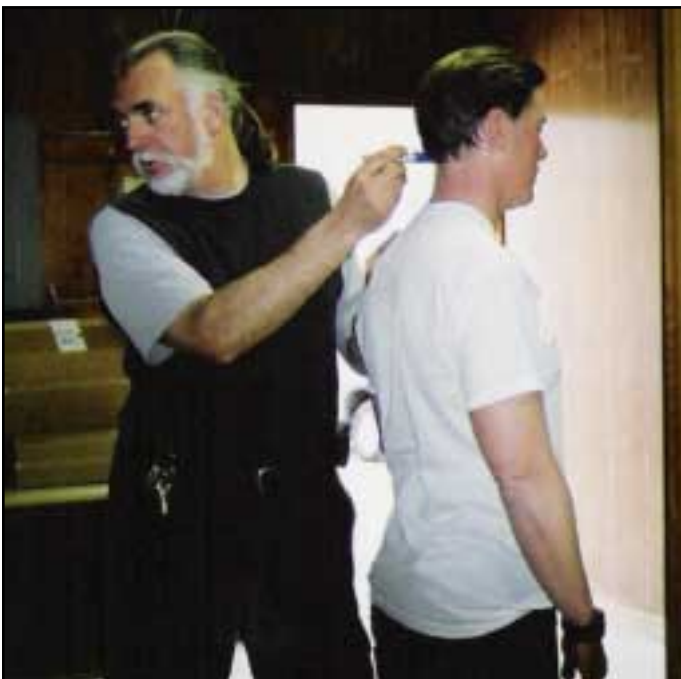




Target A



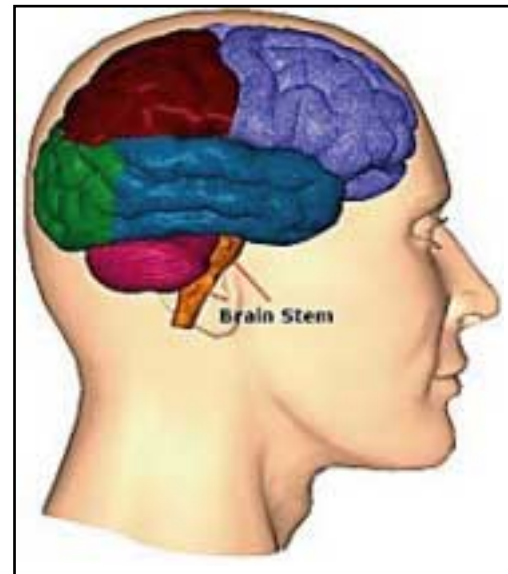
Target B



desirable resting zones for their projectiles, as in target C (below). Desirable resting points of a projectile are clearly defined for snipers who are schooled as to the exact location of the brain stem from a variety of angles. Training in this fashion will assist the shooter in recalling the *ultimate* target area, especially when the shooter is afforded more time for aimed fire.

At this year's American Society of Law Enforcement Trainers (ASLET) national conference Dr. Williams presented information on his "Tactical Anatomy Target Systems." In his training Dr. Williams has taken the visual reference concept to the highest level which includes reality based training exercises. Prior to engaging in reality-based training exercises, with non-lethal training ammunition, Dr. Williams constructs a 3-D model in the classroom and provides an opportunity for trainees to practice visualizing and aiming at target organs with a laser sighting system. The next level involves straightforward simulations using marking cartridges which reinforces 3-D target organ visualization by 'shooting' a role player wearing a t-shirt with anatomically correct markings. (www.tacticalanatomy.com)

In conclusion, in the real-world, officers operate in a 360 degree environment facing 3-dimensional targets. The shooter can have a greater understanding of the ultimate goal for round placement if the shooter is provided with a target that is more anatomically correct. In doing so, you can provide your shooter (the adult learner) with more relevance and meaning to punching holes in paper. **TFI**



Target C

About the Author

L. A. Hamblin

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- Louannblackwidow@aol.com

Williams, James, PhD. "Tactical Anatomy: A Firearms Training Model for Law Enforcement Officers", presentation American Society for Law Enforcement Training (ASLET), Jacksonville, FL. (2005)



HIP SHOOTING: THE ULTIMATE CQB DRILL

BY MICHAEL T. RAYBURN

As firearms instructors it is our duty and our obligation to learn as much as we can about officer involved shootings. If you've done any research into this area, and we all have, then it quickly becomes apparent to us that there are no rules in a gunfight. But even though there are no rules there are certain patterns or sets of facts in officer involved shootings that we can easily see and cannot be denied.

The FBI has done extensive research into officer involved shootings and the facts that surround them. In their study of officers killed in the line of duty between 1983 and 1992 they found that 56% of the officers that were killed by firearms, were killed at a distance of five feet or less. This figure of 56% does not take into account the number of officers that were killed during that same time period by other weapons such as edged weapons, blunt objects or just beaten to death. So the number for that same time period is much higher. If you look at their studies on officer assaults as well reviewing the UCR reports you'll come to the same conclusion, that officer involved shootings are up close and personal events.

This should come as no surprise to you for the very nature of our job brings us in close proximity to the people we deal with on a daily basis. Think back to the last person you had to handcuff. Did you try to handcuff that person from ten feet away? When you're on a traffic stop do you yell at the operator of the vehicle from the side of the road, or do you walk up to within five feet of the driver to obtain his license and vehicle information? It's the nature of our jobs to be up close and personal with the people we deal with, whether

that contact involves some type of enforcement action or not.

If the studies show that these events happen in close quarters and having the personal knowledge that we deal with people on a daily basis in close quarters, then it is our obligation to give our officers the firearms tactics they need to not only survive but to win an officer involved shooting. As was stated earlier there are no rules in a gunfight – except for maybe one. The first one to come up on target and place an effective shot into his or her opponent wins the fight. There are no prizes for second place.

We, as law enforcement officers, always need to be the first one to place an effective shot into our opponent – the bad guy. It's bad enough that we're already behind the curve because of the action versus reaction phenomenon, where action is always faster than reaction. Because of this we are already playing catch up to the suspect's actions.

In order to win this close quarters gunfight you're going to have to be lightning fast with your draw and you're going to have to place an effective shot into your opponent very quickly. Some of you may interpret an effective shot as a center mass hit and the center mass area is the area we want to target. But center mass shots are not always as easy as we think, especially considering the distances at which we fight in.

If you waste time trying to raise your gun up to get a center mass shot or to look for some type of sight picture on your gun then you're going to be wasting some very valuable time. Time wasted is time lost and if you start losing time when you're already playing catch up

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to the suspect's action because of the action versus reaction phenomenon, then you're going to lose this gunfight. Gunfights are won in fractions of a second – you don't have any time to waste.

This is where hip shooting comes in. I want you to think of and remember this simple phrase, "elbow up – elbow down". Your elbow goes up as you draw your firearm from the holster and then your elbow goes down. As your elbow goes down lock it into your side. Your forearm is parallel with the ground and you are facing your target squarely. The gun should be aligned with the centerline of your body.

As with anything we teach we should practice it first. Head out to the range and put up a paper target on your backer. A life sized realistic looking target works best for this drill. Stand to where you can just touch the target with the tips of your fingers on your off hand. Dry fire this drill a few times so you get the movements down remembering to use the "elbow up – elbow down" technique. You are facing the target straight on and since we are this close your off hand and arm should be up high and out of the way protecting your vital head and neck area from any incoming overhand blows or edged weapon attacks.

Once you've dry fired the course a few times and feel comfortable with the "elbow up - elbow down" method go ahead and live fire the drill remembering to keep your off hand and arm up high and out of the way. This time when you live fire the drill start firing some rounds into your target as soon as possible. As soon as your gun clears the holster and is pointed in the direction of your target start firing some rounds into it as you lock your elbow into your side and align the gun with the centerline of your body. Look at where you want the bullets to go on the target. Remember we want to get an "effective" round into

**IN ORDER TO WIN THIS CLOSE
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SHOT INTO YOUR OPPONENT
VERY QUICKLY.**

this bad guy as quickly as possible.

An “effective” round is not necessarily a center mass hit. Although a center mass hit is always more desirable, considering the distance we are at a center mass hit may not be possible. You could back up and bring your gun up for a center mass shot. But remember you’re in a gunfight. You’ll be moving and so will the bad guy, he’s not going to be standing there like a paper target.

He can move faster going forward than you can move going backwards, so he’ll quickly run right over the top of you. If you try to raise your gun up for a center mass shot in such close quarters it will either be taken away from you or be deflected by your adversary. Keep your elbow locked tight into your side and you’ll maintain control over the firearm. If he tries to make a grab for your gun just drop your elbow back a little further and lock your forearm into your side preventing his attempt.

Fire multiple rounds into your adversary. Remember we’re going for that “effective” round. Since we’re hip shooting our rounds are going to be lower than the desired center mass area so it’s going to take longer for this guy to bleed out. But hitting low is not necessarily a bad thing. Think about what is located in this area.

First you have your lower spinal column. If you’re able to sever his lower spinal column you’ll take his feet out from under him. He’ll still be able to shoot at you but you’ve lessened his mobility and therefore he will not be able to pursue you as you try to seek some cover or move out of the kill zone. If you’re able to accomplish this then you can think about going for a center mass shot.

Next you have the possibility of striking and breaking his hipbone. This may also knock him down or at the very least knock him off balance. Either way you’ve once again lessened his mobility. You also have the possibility of sending shards of bone fragments up into his lower intestines. As you can well imagine this is very painful.

You also have the possibility of creating what is known as hydrostatic action. If you’ve ever taken a plastic bottle filled with water out to the range and shot it then you know exactly what I’m talking about. As the bullet enters the bottle it displaces the water. The water has nowhere to go in the sealed container so it bursts out the sides of the plastic bottle.

To a certain extent you’ll have the same effect on your opponent. The majority of your bodily fluids are located in your lower abdominal area. Obviously your skin and tissue is a lot more pliable than a plastic bottle filled with water but to a certain degree you’ll cause the same hydrostatic action to occur when the bullet enters this area. As you can well imagine this also causes a certain degree of pain to occur.

Fire multiple rounds and continue to fire until your adversary no longer poses a threat. If you’re able to get

some distance in between the two of you then go ahead and try for that center mass shot. But don’t discount those low hits - they can be just as effective in these close quarters.

If you really want to see how effective hip shooting is try it with some Simunitions®. Arm your adversary with a rubber knife and have him charge at you from ten to twelve feet away. (Ten to twelve feet is a lot more realistic than twenty-one feet, as is commonly taught by a number of instructors. When was the last time you were on a call and stood twenty-one feet away from that person in their house, apartment or mobile home?) As your assailant charges you with the rubber knife remember to use the “elbow up – elbow down” method and draw and fire on him. Remember to lock your elbow into your side with the gun aligned on the centerline of your body and move laterally as you fire. You’ll both be surprised at how many rounds you can get into your opponent before he can reach you – if he even does.

Throw in a second bad guy and you can have your students practice this tactic against multiple assailants. Keep your elbow locked into your side as you pivot your whole body back and forth between the two assailants. Fire one round into each target and keep going back and forth between the two targets. If you try to double tap or triple tap on one target without addressing the second target right away you could find yourself in trouble when it comes to that second target. Remember these things are won in fractions of a second. Don’t give away any time to the second bad guy, put a hurting on them both as quickly as you can.

The best tactics to use under stress are always the simple ones. It doesn’t get any simpler than “elbow up – elbow down”. Teach this tactic to your students and they’ll become the ultimate CQB fighter and become that first one to come up on target and place an effective shot into their opponent. **TFI**

About the Author

Michael T. Rayburn is a 27-year veteran of law enforcement and is currently an adjunct instructor for the Smith & Wesson Academy. He is the author of three books, “Advanced Vehicle Stop Tactics”, “Advanced Patrol Tactics” & “Basic Gunfighting 101”. His video “Instinctive Point Shooting with Mike Rayburn” is also a top seller. Mike can be reached at www.pointshooting.org

SHOOTINGS MOVING OFF THE LINE

BY GEORGE T. WILLIAMS

It is time to re-think the way we teach officers to survive gunfights through live fire training. Officers standing stationary on the line, firing a string of rounds into a paper target trains marksmanship skills. However, this imparts a strategy of simply standing in front of another armed human being and blasting away until one or the other is injured or killed. This is archaic, inefficient, and should be abandoned due to its ineffectiveness in preparing officers in real-world skills. Instead, officers require live-fire training that takes into account the realities of their shootings, and is also consistent with their confrontational simulation training.

If it is true that most police shootings occur at conversational distances within 20 feet, and that half of all murdered officers are shot within touching distances of 0-5 feet, then officers remaining stationary and trading shots with suspects is an activity that ill-serves their survival. This is especially meaningful when placed in the context that all reasonable shootings are suspect-initiated. Officers in gunfights are *responding* to threat, and therefore almost universally behind the suspect's attack in a deadly force situation.

Standing in a locked-in position while receiving gunfire may be a large reason why only one in three police bullets typically hit the suspect—the officer knows he is behind in the gunfight, is in fear of being killed, the adrenaline of a sudden fear response is pumping through him—*he is being shot at while attempting to survive by shooting the suspect while attempting to solve the situation through fine-motor skills*. These are good reasons that obtaining perfect hits on the suspect is far from the average officer's ability in a real gunfight.

Simulation training involving non-lethal training

ammunition is a key component of survival training. It is often observed in this type of training that many officers tend to root in one place as stationary targets, even though cover is a few steps away. Additionally, experienced simulation "adversaries" learn to move off the line of fire as they pour rounds into the unfortunate officer role-player. In fact, "adversaries" must be coached that they are there to assist the officer, and not simply to "win" the gunfight.

Why do we see experienced simulators moving and hitting while average officers tend to respond from a static position? Simulators who have been shot at a lot in training tend to understand the value of moving, hitting, and getting small behind cover. An unfortunate truth is that police firearms training is almost universally conducted not for realistic purposes of surviving a gunfight, but for the convenience of the range-master who is conducting the training. Officers standing in one place, responding to commands to load, fire, reload, and safely holster their weapon *en masse*, ensures maximum control over individual movement, making for a safe range. The problem is, it is not enough for officers to be taught to shoot—every officer deserves to be taught to maximize their chances of remaining unhurt when a shooting erupts.

This can only occur if, taking what is typically experienced by officers in simulation and in real life, firearms trainers take steps to ensure the officer has the skills to hit the suspect *combined* with the tactics necessary to survive and win in a close defense shooting. When officers are taught to move off the suspect's line of fire as part of their basic orientation to gunfighting, their chance of surviving the gunfight increases. Move-

ment at the very inception of a shooting response must be ingrained into every officer.

OFFICERS ARE BEHIND IN SHOOTINGS

A typical shooting situation begins when the suspect projects an actual or apparent threat, causing the officer to perceive the need to respond with deadly force. In actual shootings, suspects almost universally are the first to move, and often fire the first shot of the gunfight. The officer is reactive and frantically trying to catch up.

A practical survival hindrance is the legal context that officers face in deadly force. The legal requirement for objective reasonableness in *responding* to imminent jeopardy, unfortunately, works against the officer. Officers are forced by law to *respond* to the perceived imminent threat. Shootings without the justification of imminent or apparent threat are severely punished. Instead, officers are required to perceive and articulate objective facts that lead them to believe that their lives were in apparent or imminent jeopardy of serious bodily injury. While officers are not required to identify an "actual" threat before firing, they still must be able to articulate reasonable imminent or apparent threat.

This legal requirement means that the officer's reaction-response time will play a large part in his or her survival. It takes time to observe the suspect pulling a gun from his waistband, orient to the fact that the suspect is posing an imminent threat to life, decide what to do and how to respond, and then act in a meaningful way that positively contributes to survival. The more surprised an officer is, the more confused the situation, the more fatigued or injured the officer is, the longer it will take for the officer to react.

Dr. Bill Lewinski's (www.forcescience.org) famous videotaped study of reaction times conclusively proves that an officer can easily make a decision to fire and by the time the bullet leaves the officer's weapon, the suspect's positioning and orientation to the officer can have changed altogether. A suspect facing the officer with a handgun may have plenty of time to fire, drop

the handgun, and turn completely away from the officer before the officer's bullet hits the suspect in the back.

Police car videotapes of car-stop shootings show officers routinely being shot twice by drivers before the officer can take any *intentional* action at all. We see the first bullet hitting the officer in the chest, and the officer's body reacting with surprise at the shot and the pain of the bullet being stopped by the ballistic vest. The second bullet often hits the officer before the officer has even finished reacting to the first bullet. By now, the officer's instinctive avoidance reaction has taken him away from the driver's window and out of the initial kill zone. The suspect has a choice to make: attempt to flee or reposition to continue shooting at the officer. It is only within this lull in the shooting that the officer begins to take meaningful action. The officer's reaction time begins at the sound of the gunshot and perception of the first bullet hitting him.

Firearms training must account for the combination of the real-life legal disadvantage of having to react to the suspect's deadly threat, with the very real consequences to the officer's survival of being "late" in the gunfight due to physiological hardwiring and psychological processing. Beyond mere marksmanship issues (which are very important—hitting the suspect is the only way to win a gunfight), training officers solely to stand in place and trade shots with the suspect is no longer valid. An officer's very survival depends upon the ability to counter the legal disadvantages as well as the officer's built-in human performance limitations. This means tactics as well as marksmanship at the very core of all firearms training.

THE CONTEXT OF SHOOTING AND MOVING

Context is the key to everything in life. Without context, there is no frame of reference. The key to understanding a gunfight lies not with the officer, but from the suspect's perspective. Getting inside the suspect's mind, or OODA Loop, is the key to winning and stopping the fight more quickly—that, in turn, means

"AN UNFORTUNATE TRUTH IS THAT POLICE FIREARMS TRAINING IS ALMOST UNIVERSALLY CONDUCTED NOT FOR REALISTIC PURPOSES OF SURVIVING A GUNFIGHT, BUT FOR THE CONVENIENCE OF THE RANGEMASTER WHO IS CONDUCTING THE TRAINING."

fewer rounds fired at the officer.

OODA is becoming a well-known training, tactical, and strategic concept. Originated by Col. John Boyd (USAF, deceased), it is the premier explanation of how decisions are made under stress, and how an adversary's ability to function in a combat environment can be influenced to the point of immobility. OODA is an acronym of "Observe, Orient, Decide, Act." Greatly simplified, the OODA Loop is:

- **Observe:** The individual, aware of his own position and condition, sees something—often movement, sometimes shape. This means that electrons have hit the rods and cones of the retina, and have translated light into neural impulses to the vision centers in the brain. The brain realizes that the eyes have seen "something."
- **Orientation:** The individual realizes what he has just seen, and contextualizes it. This is perhaps the most crucial aspect of the OODA Loop. The ability to orient to the new information permits a timely decision.
- **Decision:** Once the information is placed into context, the decision is made regarding the action to take. In well-trained individuals, this decision becomes nearly reflexive—experience and training combine to provide a recognizable situation and a simple response tripwire. For the less well-trained, a decision to act must be made. This, too, takes the form of selecting from experience and the individual's training, but is more cumbersome and less well honed than the well-trained individual. An untrained individual simply devolves in the "Four F's:" Freeze; Fight; Flight; and Follow directions—and simply may flail about ineffectively.
- **Action:** An action is taken in response to the decision.

This feeds back to the Observation and Orientation phase, and the cycle continues over and over as the conflict continues. If the planned action goes well, the orientation and decision phases work quickly and the individual's actions click along smoothly. The problem begins when the planned action doesn't go well, and the individual is required to re-orient to the new information, create a new decision, and then act upon it. Or the situation changes too quickly and decision cannot be made quickly enough before more feedback from the Observation-Oriented phases pile up in information overload. The OODA Loop is delayed and disrupted.

This interruption of the OODA Loop puts great burden on the timing of the individual's ability to respond. The longer it takes for the individual to process information and act, the more the critical time factor is slipping away, and the individual's actions are getting late. The result is the individual becomes more

**THE BEST WAY TO GET
INSIDE A SUSPECT'S OODA
LOOP IN A ONE ON ONE
GUNFIGHT (OR EVEN AGAINST
A SMALL GROUP) IS TO MOVE
SUDDENLY AT AN OBLIQUE
ANGLE RELATIVE TO THE
SUSPECT *WHILE HITTING*
THE SUSPECT WITH
*YOUR BULLETS***

and more tardy in each succeeding Loop (meaning a high degree of frustration, fatigue, and/or injury are occurring—all of which further slow down the orientation and decision phases of each succeeding Loop). Get far enough behind the action in any fight, and you will be defeated.

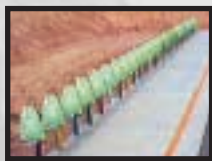
"Getting into his OODA Loop" is a phrase that accurately depicts the effect of the winner's actions. By getting into the adversary's "Loop," you, in effect, create a time differential, where through indecision and ineffective action he gets slower, while you seem to move faster. Therefore, all fighting (and a gunfight is a "fight"), is a battle to control the opponent's internal awareness of time.

To gain time, some will stress getting faster and faster with the draw and ability to hit the suspect. The reasoning is that, "Since fighting is about winning the "time battle," I need to be faster than the other guy." This takes competent, inspired practice, as well as being blessed with the genetics to support the athleticism this theory requires. The trouble is, most of us are not Olympic-quality athletes. While proper practice to create a smoother draw and quicker, more accurate hits on target is a worthy goal for everyone, the reality is that most people won't be able to draw and place rounds on a target as quickly as a top shooting competitor.

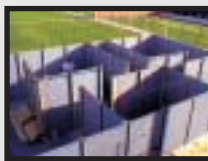
GETTING INSIDE HIS OODA LOOP

Getting into his OODA Loop is not *necessarily* about moving faster than the other guy. Col. Boyd emphasized that it is about affecting the opponent's ability to re-orient and decide what to do. Confusion, frustration, and the fog of combat create a mental *and physical* sluggishness. He said, "It's like they're moving in slow motion." He was talking about their OODA

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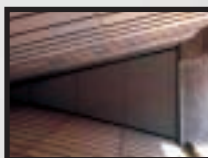
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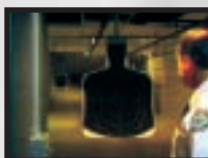
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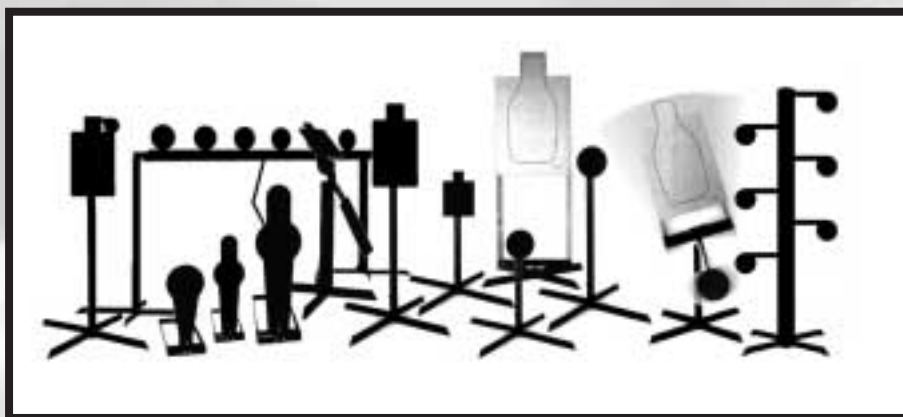


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cycling processes, which, in turn, affects their physical ability to respond to the changes of their physical circumstances that you are creating.

The best way to get inside a suspect's OODA Loop in a one-on-one gunfight (or even against a small group) is to move suddenly at an oblique angle relative to the suspect *while hitting the suspect with your* bullets. If you are at the center of a clock, with the suspect five feet away and at the 12:00, your movement will be either to the 10:30 or 2:30 positions, depending upon the circumstances. These angles create the fastest motion relative to the suspect, and requiring the suspect to lead and continue to follow-through over a large arc of fire in order to hit you—all while he is being fired upon and hit by your bullets.

Think about this from the *suspect's* perspective. The suspect is armed with a handgun in-hand, and has already observed and oriented to the fact there is an officer in front of him. The suspect and has decided to shoot the officer, which puts him in great stress. Even a hard core thug will be under a great deal of stress and becomes well-adrenalized as soon as this decision is made. The officer, at this point, has just realized the suspect is armed. The suspect orients to the position of the officer's body, and decides to make his move. The suspect raises the handgun at the officer.

The officer suddenly moves to the suspect's right, drawing his handgun by the second step. The suspect, having made the decision to shoot, presses the trigger, but the officer is already out of the line of fire. The sudden movement of the officer surprises and confuses him as he frantically attempts to locate the officer. The suspect presses the trigger again because he doesn't know what else to do except shoot as many times as possible—he's urgently trying to shoot the officer and is confused that the officer is no longer where "he should be." The officer, now off to the side and almost to his third step, fires his first round, hitting the suspect in the upper chest.

The bullet isn't the only thing striking the suspect. The muzzle blast from the officer's weapon slams into the suspect, shocking him. It's like a wet pillow hitting him, and he is further confused. His eyes open after the blast, and he finally sees the officer. He swings his weapon to his right just as another blast shocks him. This bullet from the officer hits him in the right lower ribcage—the suspect shoots and misses, because he cannot coordinate the combination of orienting and tracking the officer's continually changing position, deciding to shoot, and then acting by pressing the trigger in time to actually hit the officer. His shooting after the first round has been more out of desperation than intent as his brain wildly attempts to make sense of the situation that he thought he was controlling. He can't think fast enough, and it seems like a bad dream—the

one where no matter what he does, he moves in slow motion and can't quite catch up. The officer's bullets tearing through him and the blasts are finally too much—he collapses.

What happened here? The officer, rather than being faster on the draw and able to shoot rapidly, instead, got inside the suspect's OODA Loop through his tactics. His movement, accurate fire, and the muzzle blast all served to shut down the suspect's ability to process information and make meaningful decisions relative to the changing situation. The suspect's internal time was disrupted and became slower until he seemed as if he were moving in slow motion. His functional slow-motion was matched against the officer's real-time movements and decision-making. Slow-motion against real-time loses. Every time.

CONCLUSION

All training has an air of artificiality. There is no doubt that properly configured confrontational simulation scenarios with Air Soft weapons or marking cartridges expose officers to extremely valuable experience that can be gained in no other way in the training environment. At the same time, this type of training carries with it no real consequences other than the stings of being hit—there is no belief that actual harm will befall any of the participants. The value of live fire training—handling and employing live weapons with lethal ammunition—is that it carries with it a gravity of consequences, the most extreme of these consequences is the death of self or another. A combination of both simulation training and live fire range training is needed that safely yet realistically prepares the officer for surviving the extreme situations officers are sometimes called to respond to is vital for a properly trained officer.

A realistic live fire training program involves some marksmanship training—putting bullets into vital areas of the suspect are the key to rapidly ending a shooting. Officers who are "Tactical Monsters" but who cannot hit a suspect can end up dead, while officers who are tactically deficient can survive through marksmanship. Ideally, training will address both simultaneously. Marksmanship training should emphasize cover. If the officer isn't shooting from behind cover, *then he should be hitting the suspect while moving to cover.*

For a majority of police shootings, aside from marksmanship and cover, movement is the key to survival. Training to move should be at the core of drawing a handgun from the holster. Left or right depending upon the situation (what the military calls "horizontal displacement"), the foot moves whenever the gunhand reaches for the holstered handgun.

Learning to move directly at the suspect, or away from the suspect, is valuable only for limited types of

shooting situations. A straight line into or away from the suspect does not complicate the suspect's ability to track the officer with fire. After all, in police shootings, trajectories are simply gun-target lines—a straight line from the muzzle of the weapon to the body of an individual. Lateral movement, however, especially movement to the oblique toward to the suspect, minimally serves several important survival purposes:

It moves the officer off the suspect's intended line of fire. The suspect will often shoot where the officer was standing when he made the decision to fire, rather than shooting at the officer's present position. The result is that the officer is less likely to be hit by the suspect's initial and subsequent shots.

It carries the officer closer to the suspect, allowing not only the increased likelihood of hitting the suspect due to the decreased distances, but also provides the added benefit of the officer's muzzle blast hitting and possibly disorienting the suspect. This increases the amount of information and the number of sensations the suspect must process to orient to the changing situation.

The movement to the oblique increases the perception of the officer moving more rapidly than he actually is. If the officer is at the center of the clock and the suspect at twelve and approximately 5 feet away, and the officer takes three steps, what direction will create the largest arc of travel of the suspect's muzzle in order to track the officer? If the officer steps to the rear (to 6:00), there is no arc of travel—if the suspect is on target and presses the trigger, even if confused, the officer still takes a bullet. Three steps laterally to the 9:00 position requires less of an arc than stepping to the 10:30 position.

Sudden movement surprises and confuses the suspect, at least momentarily. This will slow the suspect's ability to respond positively (from his perspective) because of his OODA Loop—his ability to orient to the new and changing circumstances will be slowed because his perceived plan of action no longer matches the context in which it was to be applied.

Moving off the suspect's line of fire gets you inside his OODA Loop. Hitting him with bullets and muzzle blast, not being where the suspects thought you would be, and his plan no longer matching his expectations, all serve to destroy his inner sense of time. This puts the suspect essentially into a state of slow-motion, while you are in real-time motion of moving and continuing to hit him.

Training to move and hit with live fire can be done safely, and is very valuable to your ultimate survival. In fact, there is no valid argument against moving and hitting on the live-fire range. Moving off the line *as you are drawing*, putting accurate fire through the suspect, and getting to cover allows you to get into his head, and inside his OODA Loop. This is a huge survival value that too few officers are being trained to use. **TFI**



THE FIREARMS INSTRUCTOR

The Official Publication of The International Association of Law Enforcement Firearms Instructors®

NOTE FROM THE EDITORIAL COMMITTEE

We encourage you to submit articles and photos for publication, as well as letters and comments on articles which have appeared in previous issues. We can also use short "Training Tips" and "Safety Tips", cover photos, and news items of interest from a training perspective. Please refer to the Editorial Guidelines below for details on format for your submission. Take advantage of this opportunity to share information with other instructors, and see your work in print!

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IALEFI® actively solicits the submission of articles to be considered for publication in *THE FIREARMS INSTRUCTOR*, and encourages members to share their ideas, experience, and expertise with others. Neither IALEFI®, nor *THE FIREARMS INSTRUCTOR*, endorses any specific techniques, training programs, trainers, products, or manufacturers.

Members are urged to provide us with input on the style and content of *THE FIREARMS INSTRUCTOR*. Submitted articles should conform to these rules:

1. Articles should be typewritten on 8 1/2" x 11" white paper. Please have your article free of spelling and grammatical errors. We encourage you in addition to the hard copy of your material, to submit your article on a standard 3 1/2" IBM formatted computer disk or CD Rom;
2. A black and white photograph of the author, along with a brief biographical sketch, should be included;
3. Any photographs submitted should include captions. Black and white photos are preferred. Photos will be returned on request. For optimal print quality, photos should be a minimum of 275 dots per inch.

4. Submitted manuscripts will not be returned. The author should retain a copy of the manuscript.

Articles should be directed towards law enforcement firearms training, trainers, instructional methods, and officer survival. The specific techniques and practices proposed in the article may be original, unconventional, or controversial, but should reflect sound training and safety principles. IALEFI® does not publish product reviews, evaluations, or endorsements. Articles on other subjects may mention and discuss the use of specific products, including limited professional critique of the products, but the thrust of the article must be one of training methods, firearms techniques, and officer survival.

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IALEFI® loses a good friend...



I'm deeply sorry to announce the passing of Sergeant Ron Hudson of the Amarillo, Texas, Police Department, who died suddenly at the age of 52 on Saturday, October 29th, 2005, at his home. Ron was an active IALEFI® member, but moreover, a good personal friend to many of us. Those of you who attended the 2005 ATC this past June in Reno, Nevada, will most likely recall Ron as one of our most willing helpers moving audio visual equipment from room to room, unloading and then loading the IALEFI® equipment trailer, helping to set up the vendor display areas both at the hotel and the range, or whatever needed to be done.

Ron served his nation as a Navy Vietnam veteran and his community, where he was born and raised, as a police officer from 1973 until the time of his death. Ron's passion for law enforcement and his commitment

and love of his family, friends and community was evident to anyone who knew him. He will certainly be missed.

Our sincere condolences go to his wife of 32 years, Penny, and his son, Toby, who is also an Amarillo Police Officer. Rest well my friend.

Robert D. Bossey
IALEFI® Executive Director

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CAN I SEE YOUR GUN?

BY CAPTAIN ROBERT L. CONNOLLY

As firearms instructors, we are called upon to provide insight on various topics which relate to our expertise. Instructors are often consulted when selecting equipment such as holsters or body armor. We may be called to testify on training issues which relate to use of force decisions. When the time comes to evaluate your agencies ammunition selection, undoubtedly, firearms instructors will offer some information on this topic. All of these issues are dealt with on a regular basis by our instructors and we reflect on prior training and experience to search out the correct information.

Equally important is our pro-active work in the community to prevent tragic firearms incidents. As instructors we must learn how to cater our instruction to the appropriate audience. Many instructors have had the experience of explaining to an investigatory body of equal intellect why an officer follows a particular course of action. However how do you explain firearms safety and deadly physical force issues to our children?

There are various schools of thought on this subject and we routinely address this topic in our In-Service Training for Firearms Qualification. The two basic theories are:

A. HIDE THE FIREARM AND AVOID DISCUSSING THE TOPIC WITH CHILDREN.

Some officers advocate that we should not allow our children to view the weapon. Many officers wear their weapon home in a concealment holster and immediately place it into a safe. Officers may consider the alternative of securing the weapon at work if there are young children in the home.

As children grow older, they eventually realize that a parent or family member is a law enforcement officer and does carry a gun. It becomes increasingly more difficult to avoid addressing the issue of the firearm in the officer's occupation. Every agency has a story of a member's child whose curiosity has resulted in tragedy.

B. ALLOW THE CHILD TO VIEW THE FIREARM AND EXPLAIN THE INHERENT DANGER OF FIREARMS.

In an effort to combat this horrible fate, many officers have chosen to discuss their firearm with children in the home. I know of many officers who have taken the time to make their weapon clear and explained that the weapon is now a safe and empty weapon. Only then do they allow the child to manipulate the safe

weapon to remove some of the mystery surrounding the gun. These officers explain the function of the firearm and also explain how dangerous it would be to handle a weapon under any other conditions.

TAKE YOUR CHILD TO WORK DAY

Every April, our agency participates in the national Take Your Child to Work Day.

Our agency encompasses various job descriptions, but perhaps the most visible to these young visitors is the uniformed officer. We began incorporating an officer into the program to address the duties and responsibilities which a typical officer has.

However, the questions often focused on the officer's sidearm:

"Can I see your Gun?" "Did you ever shoot anybody?" "Why do you have a gun?"

We recognized the children's curiosity and the need to respond to their inquiries. A training program geared toward children was developed which addressed some of their questions and allowed us to provide firearms safety information.

RANGE TRAINING

The Program is delivered via a Multimedia "Power-Point" style presentation. The instructor explains that a Firearm is a tool which requires extensive training. Although we cannot bring these students to the range, we captured footage of the various training components at the range and the children view the officers

Instructor allows children to view inert "Blue Gun"



SCO Michael Radigan asks children, "If you found a gun, what would you do?"

participating in firearms training. Safety is stressed throughout these video clips of the range.

BLUE GUN

An instructor then explains our firearm and displays an inert ("BLUE-GUN"). Even when they are displaying this weapon, the instructor avoids pointing the weapon in an unsafe direction.

The instructor then questions the children on what they should do if they found a gun.

The responses have included:

"I'd run away", "I would cover it up to hide it",
"I would pick it up and take it to the police"

Using advice offered by the NRA "Eddie Eagle" Firearm Safety Program, the instructor presents a logical sequence of events which children can follow if they find a gun:

1. **STOP** – Do Not Touch The Gun!
2. **LEAVE** – Walk Away From The Area!
3. **TELL** – Let Someone Responsible Know! (Police Officer, Parent, Teacher, Call 9-1-1)

DON'T WORRY, IT'S NOT LOADED.

An instructor will make the statement: "Don't Worry, It's Not Loaded...."

This instructor removes the magazine from the demonstration weapon and shows the student that the source of ammunition has been removed. The instructor then asks the class if the weapon is empty. Moments later the instructor racks the slide, extracting and ejecting a dummy round. The point of the demonstration is to express to the children that only a trained adult can effectively make the firearm safe.

F.A.T.S. DEMONSTRATION

A Firearms Training System (F.A.T.S.) scenario is played on the screen as an instructor participates in the

exercise. The first scenario involves a man with a knife. The instructor draws their firearm and uses cover while giving verbal direction to the subject. The subject ultimately complies and puts the knife down. The purpose of this component is to explain the Deadly Physical Force decision making skills an officer must employ when they use their firearm. Afterwards the students discuss the scenario and the instructor explains the available force options and why they did not have to use Deadly Physical Force.

A second scenario is displayed where the instructor is responding to a reported man with a gun call. The Officer draws their weapon and simulates entering the building. As the officer advances up a stairway, a child runs out shooting a cap pistol at the officer. This scenario was chosen to demonstrate to the children how dangerous it can be to point any gun real or fake at a police officer. Afterwards the instructor discusses the seriousness of pointing a cap gun or water gun at a police officer.

COMPREHENSION CHECK

As instructors, we are aware that one of the ways we can measure the effectiveness of our training is through a "Comp Check". We conclude the training by returning to the question: "What would you do if you found a gun?"

The children respond: "STOP-LEAVE-TELL".

The program has met with remarkable success. Recently the local news media covered the program. It

*Right: Presentation screen explains appropriate steps to take if a child finds a gun.
Below: Captain Connolly participates in a F.A.T.S. scenario – "man with a gun."*



was featured on the WABC-TV Eyewitness Newsreel as well as in the New York Law Journal. Our Public Speakers Bureau has incorporated the Firearms Safety component into career day presentations at elementary and secondary schools. Our goal is to get the message out that children should STOP-LEAVE-TELL anytime they suspect that a weapon is present. **TFI**

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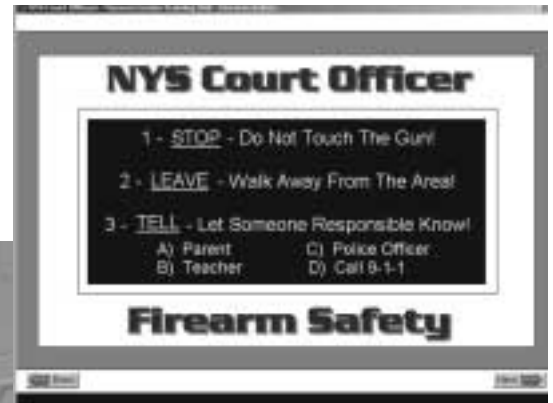
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IALEFI® Homeland Security and Counter Terrorism Conference

**Atlantic City, New Jersey
November 29th through December 1, 2005**

**by Garrett W. Voorhees, III
N.J. Division of Fish & Wildlife**

The Homeland Security and Counter Terrorism Conference was by all accounts a resounding success. More than 150 law enforcement professionals gathered in Atlantic City, N.J. on November 29th for a three day conference hosted by IALEFI® Board of Directors member Mike Boyle. Attendees represented a diverse range of law enforcement interests including municipal police officers, sheriff's officers, district attorneys, diplomatic security officers, swat teams, emergency response teams, the Federal Air Marshall Service and the FBI. Officers traveled from as far away as Virginia, Ohio, Massachusetts, New York, Pennsylvania, Missouri, Tennessee, and Illinois.

Richard Tullis of the North Carolina Justice Academy was the lead-off speaker presenting "Recognizing and Interdicting Terrorist Threats." Participants learned how to identify and differentiate between various foreign and domestic extremist groups and to identify suspicious characteristics commonly displayed by terrorists. Richard also showed those present how to recognize the indicators of potential terrorist activities such as demeanor, passport history, travel habits, fraudulent and fake identification, employment history, recruitment techniques, and unusual items found in vehicles or residences that are commonly associated with terrorist activity. Richard's presentation was an eye opener, to say the least.

Lieutenant Tom Earnhardt, a 23 year veteran and current Sniper Team Commander of the Raleigh, N.C. Police Department followed with "SWAT Tactics for

Patrol." Tom's message was pretty clear – "sharpen the saw and become a ninja with what you have." Tom showed the group how his department evaluates and trains for weapons and tactics upgrades, mindset, teamwork, conditioning for chaos, training for the real world, rapid deployment for open air and vehicle take-downs, and building searches for patrol officers. There is no doubt that Tom's training is serious, focused, and intense. Designed to save lives. The way it should be.

Colonel Danny McKnight, U.S. Army (ret) started off day two discussing "Success Through Leadership and Commitment." His name may sound familiar to you and it should. Danny was the ground commander during rescue operations in Mogadishu, Somalia. He is frequently mentioned in the book and movie Black Hawk Down. Danny used his experience in Somalia to exemplify the characteristics of commitment and leadership necessary to be successful when, to say it politely, the odds are less than favorable. His explanation of first hand experience with the political-military interface is second to none and is sure to make you stop and think. Don't miss him if he comes to your neighborhood.

Tuesday afternoon Captain Mike Williams, a 32 year veteran and current Division Commander in the Chattanooga, Tennessee Police Department presented "Crisis Response to School and Workplace Violence." Mike showed conference participants a video made in his home state of the largest school violence response training scenario ever conducted. The video included how to plan, organize, coordinate, and implement

large scale multi-agency training scenarios. Most valuable was the discussion of lessons learned from Tennessee's county-wide emergency response scenarios. In addition, Mike introduced Paramedic Lieutenant Curt Collins of the Littleton, Colorado Fire Rescue Unit. Curt provided unique insight, photos, and video of the Columbine High School event. Mike and Curt provided a wealth of information and first hand experience. They both emphasized the need for the law enforcement community to share what we have learned. To that end, they suggest you go FEMA.gov and look at the host of information available to the law enforcement community. It's good folks.

Cardo Urso, Lead Defensive Measures Instructor for the Federal Air Marshall Service kicked off day three. And what a kick off it was. Cardo, a retired career Marine MSgt, is one of the most energetic speakers I have ever seen. He focused on the psychological effects of extreme stress. Tunnel vision, auditory exclusion, and loss of fine motor skills are topics familiar to most law enforcement types. But Cardo's thorough understanding and real world examples of how these phenomena effect humans under stress gave me a whole new level of understanding and appreciation for introducing stress as a factor in training scenarios. Cardo was emphatic when he suggested we all "condition" our trainees to violence under stress. He gave a whole new meaning to "train like you play."

Last, but by no means least, was Yoram Doctori, General Manager of the counter terrorism training

organization Defender Training and Consulting. Yorum is a citizen of Israel in the United States on a special visa which allows for "the sharing of sensitive information." He served in various military and security capacities in Israel. To say his presentation was sobering would be a gross understatement. Yorum's graphic first hand photo and video examples of the horrors experienced by the people of Israel on a daily basis is powerful. Yorum explained that Israel is literally surrounded by a 24 foot fence and enjoys a 90% success rate at thwarting terrorist attacks. I was relieved until he added that despite Israel's security measures, Israel has experienced 26,000 terrorist incidents in the last 5 years - 26,000! When Yorum finished his presentation it was obvious that the primary targets are Israel and the United States. The motivations are many, the disguises are varied, the enemy is clever and resourceful, the weapons are ever-evolving, and the delivery methodology is diverse. Very scary stuff.

Those in the know tell us that this is a problem that's not about to go away any time soon. They also tell us that it could show up on your doorstep or mine tomorrow. The question then becomes, Are You Ready? Ask your children or grandchildren when was the last time they practiced a lock down in school. Better yet, ask them where they are supposed to go if they are caught in the school hallway when a lockdown takes place. Then you'll know.

There's a lesson in all this for us folks. Train, train, train. And when you think you're finished, go train some more. **TFI**

To the men and women in uniform, past, present & future...



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Our sincerest gratitude goes out to all of the soldiers who provide the blanket of safety under which we sleep every night.

MINDSIGHTING:

TRAINING PSYCHOLOGICAL SKILLS FOR MAXIMAL SHOOTING PERFORMANCE

by Michael J. Asken, Ph.D.

It has been said that overriding the effects of adrenaline on performance is the “holy grail” of firearms instruction (Williams, 2004).” Those effects of stress related to adrenaline can occur during training and evaluations, during qualifying, in competition, or in real-world encounters. The types of responses and their impact on performance in high stress situations for police officers have been well described by Grossman (2004), Murray (2004), and Artwohl & Christensen (1997) among others. This is why, after optimizing shooting skills in closed and static environments, maximizing response in high-stress live situations is a critical, if not the central goal.

The challenge to train maximal responses in high stress situations does indeed often seem to involve the search for (sometimes elusive) effective instructional techniques. A variety of approaches can be used, though all share the common thread of practice...and more practice. Beyond frequent training, reality-based simulation is a critical and excellent approach to preparing for the reality of high stress situations. Simulation can involve role playing, scenario rehearsal, or force on force exercises using simunitions and the like (Murray, 2004)

However, there is another approach which can be integrated into training to prepare for and maximize response in high-stress situations. This is psychological skills training. In *Train to Win*, Doss (2003) has recently written: “what I find amazing is that the best edge up on the other guy is in our very head.”

Psychological skills training has been used successfully in several areas of human high-stress performance. The bulk of this work has been done with elite level athletes such as Olympians (Suinn, 1986). However, procedures have been adapted for firefighters, emergency medical personnel and emergency medical situations (Asken, 1993). The military has also recognized the value of psychological skills training. The Performance Enhancement Program at the U.S. Military Academy at West Point provides over 4000 individual training sessions per year, as well as working with specialized units such as the U.S. Army Marksmanship Team (Zinsser, 2004).

References to psychological performance skills can be found scattered throughout the police literature (Grossman, 2004; Murray, 2004; Willis, 2004; Duran, 1999; Siddle, 1995). Remsberg (1986) was one of the first to address these issue in some depth and Anderson and colleagues (1995) further developed applications to police work. However, it is much harder to find a systematic or comprehensive program. In fact, Doss (2003) states that train-

ing to develop the winning mind set is “without a doubt one of the most overlooked areas of training.”

The following will briefly describe the purpose and nature of several psychological skills that can be used as part of shooting and police skills instruction as means to help master skills and have application to live situations, as well. One such approach has been called Mindsighting training.

The goals a MindSighting program include (1) maximizing specific skill quality during training, (2) maximizing specific skill quality in live situations, (3) maximizing preparation for various response situations; (4) maximizing confidence about response capability in training and live situations, (4) maintaining skill levels over time (keeping skills fresh), (5) reducing response stress and critical incident stress, and (6) teaching skills for application to all areas of performance in police duties.

Training such as MindSighting program is comprised of at least four central psychological performance skills. These include (1) Tactical Arousal Control, (2) Attention/Concentration Training, (3) Tactical Performance Imagery, and (4) Tactical Self-Talk.

Perhaps the primary psychological skill for maximal skill execution is understanding and managing arousal. Arousal is the physical and emotional equivalent of “lights and sirens”. Arousal is the activation of the body (both physically and psychologically/ emotionally) to prepare to function in challenging and often stressful situations. Tactical Arousal Control control is the ability to both increase arousal when needed and decrease arousal when necessary.

Our best understanding is that some degree of arousal is needed for an optimal response. This is represented in the often written about “upside-down U theory” of performance which says too little or too much arousal hinders performance. There is some level for each individual where he/she performs the best. In fact, the “zone” where an individual performs the best is called the “optimal arousal level.”

Siddle (1995) is a strong proponent of the idea that fine motor skills start to decline when heart rates exceed 115 beats per minute; and gross motor skills and cognitive functions can be affected at higher heart rates. His model has been enhanced by Grossman (2004) who, like Remsberg, describes various levels from Condition White (too little arousal) to Condition Black (too much arousal), as related to response quality. Middle Conditions Yellow and Red are offered as the most typical levels for maximal per-

formance. (Later research by Vonk, 2004, has emphasized the importance of differentiating heart rates elevated due to physical exertion versus elevation due to stress when looking at effects on performance. She further suggested that focusing on *specific* numbers for heart rates may be misleading).

In line with the above, Landers and Daniels (1985) cite research with Soviet shooters that showed best performance when each individual's heart rate increased eight to fifty beats per minute above their own baseline. Poorer performance occurred when heart rates either decreased below their baseline or increased more than fifty beats per minute above it. Other data they present suggests that shooters' heart rates average in the eighties and nineties (beats per minute).

During a police response, *lack* of arousal is not usually a problem. However, there are times when it is necessary to "get up" or refocus. Situations such as being roused from sleep for a call-out, fatigue from a lengthy call, boredom, or "letting up" too soon (before a scene is totally secure) can require increasing or maintaining arousal to perform optimally. The use of cue words, cue images and attentional focusing are techniques to accomplish increasing arousal to optimal levels.

It is certainly more usual that police calls are characterized by too much or overarousal. Well-known are the acute effects of stress like rapid and pounding heart beat, quick and shallow breathing, cold and sweaty palms, and draining bladders. Data from Fenici et al. (1990) shows that in dynamic shooting competitions, heart rates averaged 100 beats per minute and some competitors had rates of 180 beats per minute or more; higher rates were associated with reduced scores. Vonk (2004) reported that in pre-service cadets undergoing Simunition scenarios demonstrated sustained heart rate elevations (ranging and oscillating) from 145 to 180 beats per minute with spikes in excess of 200 beats per minute. It was further reported that the more frequent the spikes, the worse the performance.

As noted, Grossman (2004), Murray (2004), Artwohl & Christensen (1997) have all importantly and effectively discussed direct performance effects from over-arousal. These effects range from distortion in vision and hearing to time distortion to temporary paralysis. As an indication of the impact of these reactions on performance is the often cited data highlighted by Rayburn (2004) that the average hit rate in a gunfight is from 14 to 18% (a miss rate of 80%) compared to qualifying situations where hit rates are 90%. (Recent data suggests that hit rates in gun fights may actually be higher, though still far from 90% qualifying levels, and depend on the situation and conditions at the time of the encounter; Lewinski, 2005).

Therefore, psychological techniques have the potential to be very helpful to an officer in such situations by helping to dampen the negative effects of stress and arousal. While many techniques for training relaxation responses are available, Landers and Daniels (1985) recommend the specific technique of progressive muscle relaxation as a training tool. They do so because of evidence that shooters report subjective positive effects from its use; it has demonstrated superiority to other relaxation approaches; and it has been effective with both cognitive anxiety (worry) and somatic anxiety (physical symptoms).

Biofeedback involves arousal control training with a machine that makes any changes in physiological effects in the body available for observation (feedback). Typical biofeedback measures used with shooters include heart rate and rhythm (EKG), brain wave rhythm (EEG), skin temperature and conductance (GSR). The reasons for this are that it has been found that elite shooters may trigger squeeze at specific and consistent points in their cardiac cycle (heart beat); that brain activity associated with verbal thinking decreases and spatial thinking increases with sighting in elite shooters; and that blood flow/ temperature in the fingertips increases (Landers & Daniels, 1985).

While some of these measures and the training associated with them is obviously much too complicated and sophisticated to be done anywhere other than elite research and training facilities, there are more simple techniques that can have an impact. For example, relaxation techniques can help control heart rate and increase relaxation brain states (alpha waves). Given that stress tends to create "cold and sweaty palms" the increased blood flow to the fingers that can occur with relaxation may be important in maintaining the increased finger temperature found in elite shooters.

Tactical breathing techniques, whether called "deep", "relaxation", "diaphragmatic", "combat" or otherwise have an important role in optimizing shooting performance. There is some discussion over the merits of various approaches. However, as there even other breathing techniques, and given that all psychological techniques should be tailored to an individual and specific situation, the one that works the best for a given individual should be considered.

Tactical Arousal Control techniques can have other performance benefits, as well, such as conserving energy on scene during long calls, aiding survival if injured, and promoting sleep after a stressful shift.

Concentration is the ability to direct or maintain your attention or thoughts, an essential skill for effective shooting responses. Psychological training can help strengthen this ability. Under stress, attention and concentration will change in several ways. Two of the most critical effects, already alluded to above, are that concentration narrows (tunnel vision) and becomes internally focused (feelings of stress).

While sub-ideal performance is often attributed to "stupid mistakes" or "I wasn't thinking," the real cause is not stupidity, but often a lapse in attention and concentration. Concentration can be trained and practiced with relaxation techniques to help prevent the above stress-related responses and with other techniques from attention control training to computer assisted training to strengthen focus and reduce distractibility.

Tactical Performance Imagery is a psychological technique that has gained some acceptance in police skills training (e.g. Asken, 2005; Willis, 2004). It has several important applications such as improving a specific skill; error analysis and correction for shooting/ police skills sequences; situation simulation; confidence enhancement, response preparation and skill retention. It is an excellent technique to allow the mental practice or rehearsal of a skill or scenario when actual practice is not possible because a situation can not be readily simulated or time is limited. Research has found that imagery can

produce physical responses in elite shooters much like that of actual competition (Deschaumes-Molinaro et al., 1992).

Performance psychology research has clarified some important factors that can enhance the effectiveness of performance imagery. Also, since there may be great variation in officers' abilities to do imagery, the use of a skilled professional when initially learning performance imagery may be beneficial in order to avoid disappointment or problems.

A final psychological performance technique to be discussed here is Self-Talk. Self-talk is based on the idea that before we do any behavior or experience any emotion, we first "say something" or talk to ourselves. The process is very quick and often we are not aware of it, but it is there. Duran, in *Developing the Survival Attitude* (1999) has said: "but you should understand that a relationship between words and actions does exist, and that words can have a direct positive or negative effect..."

Becoming aware of our self-talk in certain situations and changing it can affect our emotional and behavioral responses to a situation. For example, anger self-talk leads to angry emotions and behavior; while calming self-talk can promote more control.

There are specific ways to train more performance directed self-talk and allow officers to "STEP-UP" or become more proficient in using Self-Talk for Enhanced Performance-Under Stress. Especially important is managing negative self-talk (sometimes called "stinkin' thinkin") which can erode confidence and motivation. Negative thought stopping techniques can be useful here.

Psychological skills training has the potential to contribute significantly to the quality of shooting performance. However, several cautions and limitations should be kept in mind. The understanding and application of psychological techniques to shooting and police skills is still developing. Instructors and officers need to decide about the applicability of the techniques to any given situation. For example, most of the research done on shooting occurs with static, competitive situations, so that the applicability to a dynamic and certainly a combat situation should not be automatically assumed.

Also, as the research of Landers and Daniels (1985) has shown, there is great variation among elite shooters. Techniques should be adapted for individual officers and situations as needed. The attempt to force all officers into a psychological style should be avoided. Psychological techniques need to be practiced frequently and correctly; just as with physical skills, the goal is to produce an instinctive response as closely as possible. Psychological skills are not a substitute for other training and practice. Ideally, psychological skills will be integrated with other training for a truly comprehensive approach. Finally, an understanding of the psychological techniques should be acquired before instruction is given.

Nonetheless, psychological skills can aid firearms and other police skills performance. Fenici et al. (1999) have commented in discussing action pistol shooting competitions that 'As in a real gunfight, proper mindset, physical training and tactics win or lose the game.' The same is also true of training for real life situations. **TFI**

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