FORCE SCIENCE® NEWS

Chuck Remsberg
Editor-in-Chief

In This Edition:

Update on Force Science research about unintentional discharges

I. Update on Force Science research about unintentional discharges

A Force Science research team has completed an update of its ongoing analysis of unintentional firearms discharges by LEOs in the US and Canada.

We reported on the initial phase of the team's work in Force Science News #317 [8/10/16], when the researchers had studied 137 UD occurrences.

Now 171 additional instances have been analyzed, offering a broadening picture of the causes, circumstances, and consequences of "an unplanned activation of the trigger that is outside a handgun's or long gun's prescribed use;" i.e., an unintentional discharge.

A full report of the latest findings is headed for publication in a peer-reviewed, scientific journal, but here are highlights of the new study, according to Dr. John O'Neill, a behavioral scientist with the Force Science Institute, who led the research.

FORCE SCIENCE® INSTITUTE

THREAT LEVEL. More than half of the UDs happened on-duty, overwhelmingly while officers were performing "highly routine activities," such as cleaning, clearing, checking, moving, or storing their guns. "A large number of UDs occurred because officers falsely assumed the firearm was not loaded," O'Neill observes.

More than one-quarter, however, occurred in high-stress, potentially high-threat situations, O'Neill reports. Most often, the discharges happened on traffic stops, followed in frequency while searching for armed suspects, pursuing subjects on foot, or physically restraining arrestees.

CONSEQUENCES. About half the time, UDs cause property damage. But one in five produce injury, to the shooting officer, a suspect, or another officer. Most often, injurious discharges occurred while officers were performing commonplace "routine tasks" with their weapon.

A small minority of UDs are fatal, usually to a suspect or sometimes to a fellow officer. "No officers [in the study] died as a result of a UD with their own firearm," O'Neill says. Most reported deaths apparently occurred from "involuntary muscle contraction" while officers were "restraining or chasing a suspect."

NEW CONFIRMATION. For the first time, O'Neill claims, the study provides evidence to suggest that UDs can be caused by a "startle response"; that is, an officer is surprised by a sudden sight, sound, or physical contact, causing him to pull the trigger if his finger is inside his trigger guard.

Other researchers have speculated that a startle reaction could be a factor in some UDs, O'Neill says, but "our data provides the first known empirical support" for this theory, having documented six cases where a startle-response discharge occurred.

Included is a case in which two UDs occurred at the same scene, one of them involving a startle response. An officer carrying a shotgun jumped over a small ditch after completing a call, lost his balance, fell, and unintentionally discharged his weapon because of a "muscle co-activation response." His partner, nearby with a .22-cal. rifle, "was startled by the unexpected shotgun blast, causing him to unintentionally discharge his rifle."

TRAINING TIPS. FSI's research team offers several training tips:

1) To help counter the startle response, "officers may benefit from exposure to high-stress training scenarios that incorporate unexpected and intense auditory, visual, and [physical] stimuli," O'Neill writes.

2) When handling firearms for routine tasks, such as dry-firing or disassembly, "a critical step is making certain that ammunition is not in the chamber."

3) Maintaining finger indexing away from the trigger until intentional shooting is imminent is also critical. Unfortunately, "routine range practice may facilitate a strong-but-wrong response by conditioning officers to automatically position the finger on the trigger immediately after the firearm is drawn," O'Neill notes.

"Trainers may consider instructing officers to always index before shooting on the range and to practice indexing during various

conditions (e.g., static, dynamic, high and low stress)."

Besides O'Neill, the FSI research team included: Mark Hartman, a doctoral student in the Dept. of Kinesiology at Iowa State U.; Dr. Dawn O'Neill, a staff behavioral scientist with the Force Science research division; and Dr. Bill Lewinski, FSI's executive director.

Dr. John O'Neill can be reached at: john.oneill@forcescience.org.

NOTE: O'Neill and his team are continuing to collect examples of unintentional discharges, and at this point are particularly interested in UDs that have occurred while a sidearm is holstered. Please contact him with any relevant information you are willing to share on a confidential basis.

II. New study: Many officers "blind" to plain-view threat

As a veteran officer approaching a traffic violator, would you notice a gun lying in plain sight on the dashboard of a vehicle you've detained for running a stop sign?

Before too quickly thinking "of course," consider the findings of a new study of the phenomenon known as "inattentional blindness." That term refers to the common human failure to notice unexpected objects or occurrences clearly within your field of view while your attention is focused on something else.

This cognitive lapse, which is studied in the certification course on Force Science Analysis in the context of officer-involved shootings, has been thoroughly documented in low-stress psychology lab experiments involving computer images and video recordings.

Now one of the leading researchers in this field, Dr. Daniel Simons of the psychology department at the University of Illinois, reports fresh findings that apply directly to LEOs in potentially life-threatening, real-world situations.

His results raise a vital question: What can officers and trainers do to enhance observational skills when police lives may be on the line?

TEST SCENARIO. Over a period of three years, Simons and his study co-author, Dr. Michael Schlosser, ran 100 police recruits and 75 seasoned officers (mostly white males) through a single, realistic, live-action scenario at the Police Training Institute in Urbana-Champaign, IL. (Schlosser is the director of that state academy.)

One at a time, the participants were told to approach an SUV they had just "stopped" for running a stop sign and to interact as they would on the job with the lone occupant, the male driver. They were to "use their discretion to decide" whether to issue a ticket or give a warning, Simons writes.

In some randomly determined cases, the driver, an experienced role-player, was "polite and friendly," admitting fault, apologizing, and "immediately and appropriately" complying with all requests and instructions. A roughly equal number of other times, the driver was still compliant but displayed an "aggressive" attitude—"verbally hostile, agitated, and overtly upset," complaining about "unfair treatment" and being stopped "to fulfill a quota."

In all cases, an Airsoft pistol was conspicuously positioned on the dashboard above the glove box, "fully visible to [each] participant through the driver's window" throughout the contact.

After experiencing the scenario, the subjects were asked a series of questions, including whether they noticed "anything that might have been a danger to you" and whether they saw "any weapons" during the exercise.

STRIKING RESULTS. "Overall," Simons writes, "only 52.6% of participants noticed the gun even though it was fully visible."

• Of the recruits, who had received four to eight hours of hands on training in vehicle-stop tactics, only 42% saw the gun.

• While "experienced officers were substantially more likely to notice" the weapon (66.7%), "1/3 of them missed the gun as well...and proceeded to cite the driver" without taking any protective action.

• Among the veteran officers, who averaged about 12 years in law enforcement, "neither patrol experience nor age was meaningfully associated with noticing."

• "A slightly larger proportion of both trainees and experienced officers noticed the gun" when the driver was calm and compliant than when he was aggressive, but the difference was "not statistically significant."

• When participants did notice the gun, "they always called attention to it and took appropriate measures (ranging from discussing it with the driver to drawing their own weapon and instructing the driver to exit the vehicle.)" Among experienced officers, many of those who noticed the gun did so "early in the interaction, often before asking for the driver's license and registration."

In summary, Simons writes, this study, believed to be the first of its kind, "provides clear evidence that experts performing a naturalistic task in their domain of expertise can miss a potentially dangerous unexpected object that would have direct consequences for them and the way they perform their task.

"Moreover, this failure of awareness occurred for a group of participants (police officers) trained to look for and assess threats."

The fact that the driver's demeanor had little impact on whether the gun was noticed tends to dispute "the idea that people will be more likely to notice threatening unexpected objects in contexts that are more stressful or potentially more dangerous," Simons points out.

COMMON OCCURRENCE. Most participants who missed the gun expressed surprise or chagrin at their failure. But Simons explains that "people often fail to notice unexpected objects and events when they are focusing attention on something else."

Typically, this "inattentional blindness" is confirmed in laboratory experiments in which the unnoticed objects are unimportant to the person being tested and unrelated to that person's primary task focus.

But in this case, the subjects involved have training that emphasizes "vigilance for possible dangers and threats" in their environment, and the presence of a gun on

a real vehicle stop "would have direct and immediate consequences for the officer(s). It is [highly] relevant to their task."

Logically, "the potential threat should override inattentional blindness." Indeed, the subjects "expected that they would automatically notice something salient and relevant." But as the data shows, that proved to be far from a universal occurrence.

"Given that the participants came from a wide range of jurisdictions,...we would expect the pattern of results to hold for trainees and experienced officers from most jurisdictions in the USA," Simons concludes.

TRAINING IMPLICATIONS. Simons offers two suggestions for trainers:

1) Actively dispel the misconception that all relevant and important objects and behaviors in view at a given scene will automatically be observed, and

2) Highlight how the nature of an interaction, whether cordial or hostile, "does not strongly predict whether or not an officer will notice an unexpected threat."

Dr. Bill Lewinski, executive director of the Force Science Institute, which was not involved in Simons' research, adds these comments:

"Dr. Simons is without question the master researcher in the field of inattentional blindness. His confirmation of this phenomenon in law enforcement is very significant for investigators and for countering police critics who claim that officers are simply lying when they insist they did not see some important elements of a controversial incident."

As to how to avoid or minimize the risk of inattentional blindness during citizen contacts, Lewinski offers these suggestions:

• When possible, carefully scan the area you're approaching before you engage in dialog or action in the encounter. "Once you're tied up in dialog, it's very difficult to simultaneously be aware of items or furtive movement in the surrounding environment," he explains. (This is consistent with Simons' finding that veteran officers who spotted the gun on the dashboard usually did so early in their approach.)

• Train your professional skills to the point that they tend to be automatic, not requiring conscious concentration. "If you have to think about how to perform the routine elements of what you're doing, you have fewer cognitive resources to apply to awareness and assessment," Lewinski says. (Simons alludes to this in his study, speculating that the relatively inexperienced and poor-scoring recruits may have been so focused on the mechanics of conducting a proper traffic stoop that their observational skills were unduly compromised.)

Lewinski points out that the Force Science Institute is currently researching how instructors can more quickly and effectively build automaticity in officers to enhance their safety on the street in the time typically allotted to training.

Simons' study, titled "Inattentional blindness for a gun during a simulated police vehicle stop," appears in the publication Cognitive Research: Principles and Implications. It can be accessed in full, free of charge by clicking here.

Dr. Simons can be reached at: dsimons@illinois.edu. He is co-author of an excellent book, The Invisible Gorilla: How Our Intuitions Deceive Us, which includes discussions of inattentional blindness relevant to law enforcement.

III. UOF perceptions & skills retention studies are conference topics

Preview reports on Force Science research findings regarding the public's perceptions of police use of force, the retention rates of physical skills training, and the nature of unintentional discharges were showcased recently at major professional conferences in California and Minnesota.

Thumbnail summaries:

Civilian beliefs about use of force by police are often shockingly far from reality, behavioral scientist Dr. Dawn O'Neill of the Force Science Institute's research division explained in a presentation at the annual conference of the Society for Police & Criminal Psychology in San Diego.

Citing findings from a pilot survey of more than 540 young adults in five states, O'Neill said that those sampled:

• believe officers use deadly force in nearly 20% of their encounters with civilians (Reality: The figure is actually less than 0.0037%);

• believe LEOs receive more than 80 hours of training in communications and de-escalation at the academy level (Reality: On average, they get 36 hours);

• believe the time between shots in a gunfight is about three seconds (Reality: It's an average of 0.28 seconds);

• believe police UOF is dramatically on the rise (Reality: The rate has been relatively steady—and very low—across recent years; for a more historical perspective, see Item IV below).

"A lot of media coverage fails to focus on human factors and behavioral science elements of police use of force, so it's likely that the public is not aware of such research, contributing to the widespread misconceptions," O'Neill says.

Physical skills deteriorate fast without refresher training, another FSI scientist, Dr. John O'Neill, told an SPCP audience in a separate presentation.

Drawing on early findings from an ongoing multi-academy study, John O'Neill revealed that:

• Within eight weeks of being taught important DT techniques, trainees on average experience a "significant decrease" in their ability to perform relatively "easily acquired" skills, such as baton strikes and mandibular-angle pressure point control;

• With "more complex" skills, such as handcuffing and weapon retention, "significant decline" in performance occurs within just one to two weeks after initial instruction;

• Thus, recruits' proficiency in physical skills needed to control adversaries on the street may, in reality, be "diminished drastically" before they even leave the academy.

Fortunately, O'Neill explained, the skills retention can be markedly improved with some simple changes in teaching techniques.

The study shows significant gains in sustained proficiency at a high level of mastery by the use of regularly spaced "refresher/booster training sessions," video modeling, and assigned "homework" practice, he said.

Force Science News will be reporting in depth on this groundbreaking research in future editions.

At the SPCP conference, research projects involving other Force Science affiliates—instructors Chris Lawrence and Dr. Chris Hall and Advanced Specialist graduate Simon Baldwin, a researcher/use-of-force analyst for the Royal Canadian Mounted Police—were also on the agenda.

Meanwhile, the Drs. O'Neill collaborated on a major "invited talk" on "Applications of Behavior Analysis in Law Enforcement" at a conference of the Minnesota Northland Assn. for Behavior Analysis at Bloomington, MN.

John O'Neill provided more details on the study of skills learning and retention and Dawn O'Neill described the study of unintentional discharges reported on in Item I of this issue.

IV. Quotable quote: Setting the OIS record straight...

From The Wall Street Journal, by columnist Jason L. Riley:

"[S]tatistics that are available suggest that police today use deadly force significantly less often than in the past. In New York City, home to the nation's largest police force, officer-involved shootings have fallen by more than 90% since the early 1970s, and national trends have been similarly dramatic.... [A]ccording to figures from the federal Centers for Disease Control and Prevention, the rate at which police kill blacks has fallen by 70% since the late 1960s.

"An increase in press coverage of police shootings isn't the same thing as an increase in police shootings."

Written by Force Science Institute
October 18th, 2017