April 22, 2008

Causal Analysis Review

Near Miss - Handgun Discharges While Holstering

Presented below is a synopsis of a report finalized in the Occurrence Reporting Processing System (ORPS) on March 10, 2008, that provides a valuable assessment of the causes associated with a near miss event. In this occurrence, a Glock handgun discharged during a holstering process. We are providing this synopsis to you because we find the causal analysis conducted by the reporting organization to be valuable. Also, the reporting organization has issued a Lessons Learned Report, which we are providing, along with a second one discussing a serious injury due to accidental discharge of a weapon. Two supplemental Occurrences are also synopsized and attached, as they provide relevant causal analysis. In both the featured Occurrence, and one of the supplemental ones, the observation is made that previous experience in the DOE complex could have been applied to prevent the event. We express our appreciation to the reporting organization for their valuable causal analysis.

Featured Occurrence

Los Alamos National Laboratory, TA64-1
NA--LASO-LANL-BOP-2007-0015 - Near Miss to Personnel Injury: Glock Handgun Discharged During Holstering Process – (Significance Category 3)

HQ Summary: A loaded 40 caliber handgun discharged while a security police officer was putting it into its holster. The discharged bullet exited through the side of the holster, through the pant leg of another officer, and lodged in the floor. No injuries resulted. Preliminary investigation indicated that the handgun with a flashlight attached below the barrel may have hung up on the holster.

Causal Summary: The investigation found that the handgun became misaligned with the holster during holstering, causing the officer's finger to enter the trigger guard and pull the trigger, resulting in the discharge of the weapon. This happened because the officer had been using a newly issued holster that was not like ones previously used. It had a tactical flashlight installed, which got snagged in the holster during the holstering process. These tactical flashlights recently had been installed on all Glock 22 handguns. The addition of the flashlight required a new holster, designed to accommodate the unit. Although it is similar in design to holsters previously used, it is worn differently, mid thigh on the leg, rather than on the duty belt. There was no formal review process involved in the selection of the new holster. The analysis involved in the acquisition of the holsters did not recognize the types and magnitudes of hazards

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or the potential accident scenarios involved in holstering. Also, training on use of the holster was determined to not be necessary, though 20 minutes of practice was provided upon issuance.

Lessons Learned: Prior to the issuance of an equipment change, it is imperative that a sufficient level of hazard analysis be performed to ensure the safety of equipment, personnel and operations. This event illustrated how an insufficient level of hazard and training analyses resulted in an unauthorized handgun discharge.

Additional Occurrences

In addition to the featured occurrence, we draw your attention to two similar events worth noting. They are summarized below, with the full reports attached.

1) SPR Project Office, New Orleans Site
FE-HQ--SPR-SPRO-2005-0002 - Discharge of a weapon by a protective force security officer (student) causing injury to himself – (Significance Category 3)

HQ Summary: During live-fire handgun training for Strategic Petroleum Reserve (SPR) personnel at Camp Beauregard, Louisiana, a student lost his grip on the weapon, attempted to regain his grip, and discharged one .40 caliber round into his groin area. The injured student was transported to a local hospital by ambulance. The weapon was secured, the firing range was shutdown, and all SPR firearms training has been suspended, pending completion of an accident investigation.

Causal Summary: The accident investigation team found that the primary failures to control the hazards were rooted in human performance, communications, and training deficiencies. The cadet was a trained police officer. It was unlikely that his previous Peace Officer and Standard Training (POST) training instructed him to drop his weapon should he lose control of it. Also, although the holster he used in his work in the Sheriff's office was similar to that used by PGS, it was different. In the training, the cadet had to choose the target, then un-holster his weapon and fire it. After the gun caught on the edge of his holster, the cadet felt that his weapon was not gripped properly and that he might lose control of it. He reacted instinctively and tried to grab the gun or steady it with his right hand instead of letting the weapon fall as he had been instructed. The weapon discharged at this time.

2) Nevada Test Site, Area 23
NA--NVSO-WSIN-NTS-2006-0002 - Occupational Illness/Injury, Firearm wound to upper right leg – (Significance Category 2)

HQ Summary: On April 7, 2006, a security police officer received a .40 caliber bullet wound to the upper right leg when his service pistol unexpectedly discharged as he was holstering the weapon. The injury occurred as the officer was participating in a live fire exercise at the Area 23 Firearms Training Range. The injured officer was given first aid and air-lifted to the University Medical Center Emergency Room, where a bullet fragment was removed, sutures were applied, and the officer was released after being provided with pain medication. A "Type B-like" accident investigation was conducted.

Causal Summary: This investigation determined the direct cause was the discharge of a pistol during a training exercise when a load-bearing equipment (LBE) strap became entangled with the trigger. Inadequate training was identified as a contributing cause. Protective Force members were not given ongoing and available instruction regarding proper disposition of the straps. Neither NTS nor DOE Complex experience was effectively used to prevent the occurrence.

Lessons Learned: Lessons learned include: conduct risk assessment on all new equipment and the compatibility with other equipment; communication of proper wear of tactical equipment through policies, training, and performance supervision; and conduct of individual, buddy, and supervisory inspections of individual equipment during each muster. These lessons learned have been made available to all DOE organizations.

Why is the Accidental Discharge of a Firearm Important?

These incidents are important because every firearm discharge presents the risk of extreme injury to the operator of the weapon as well as to people in the surrounding area. Lessons can be learned from each stage of a firearm discharge incident, such as:

- What are the precursors, or factors, that lead up to a firearm discharge incident?
- What are the potential consequences of the incident?
- What lessons are learned from immediate responses to firearm incidents?
- What are the overall lessons learned from firearms discharge incidents as well as corrective actions designed to prevent further incidents?

Other Recent Firearm Discharge Events:
On March 30, 2007, during weapons practice, a Heckler & Koch P-7 9mm handgun unintentionally discharged on Range 1, position #19, at the Hanford Patrol Training Academy. This occurred while a Security Police Officer (SPO) was preparing to move into a kneeling firing position as a part of the course of fire. As the SPO withdrew his weapon, the front sight post may have caught on the retention strap of the holster. This apparently caused the SPO to loose his grip and control of the handgun. The SPO, as he was taught, allowed the handgun to drop to the ground (without attempting to regain control of it). The handgun fell approximately 36-40 inches before striking the concrete shooting pad. The pistol struck its muzzle against the concrete floor. Upon impact, the handgun discharged a live round into the concrete floor then down range. No injuries were reported. (ORPS Report EM-RL--PHMC-PATROL-2007-0001)

On February 15, 2007, an on-duty SOP reported an unauthorized discharge of a firearm at Station 510 (Nevada Test Site Perimeter Access Control Station in Area 25). The SOP who discharged the weapon reported that he and another SOP on the Station had downloaded their respective P226R, .40 caliber firearms in preparation for conducting unauthorized practice for the up-coming semi-annual qualifications. After downloading their weapons, they practiced techniques for drawing the weapons from their holsters and dry-fire at one of the windows in the station. After a few minutes, they both reloaded their weapons. One of the SPOs forgot that he had reloaded his weapon, drew the weapon from his holster, pointed it at the window, and pulled the trigger. The weapon fired and the bullet impacted and damaged the bullet resistant window; however, it did not penetrate the window. (ORPS Report NA--NVSO-WSIN-NTS-2007-0001)

A review of accidental firearm discharges reported in ORPS from January 2000 to the present shows ten occurrences. Personnel error was the single most frequent direct cause of these firearm discharge events, while equipment or material problems were the least. The majority of these occurrences occurred during

training, which demonstrates that lessons learned and corrective actions should focus on minimizing the possibility of an unauthorized discharge during training. Even small numbers of firearm discharge events can have a serious effect on personnel and operations. Every unauthorized firearm discharge incident has the potential for serious consequences:

- Injury
- Fatality
- Damage to system components

Recommendations:

- Ensure that incident investigators have the appropriate expertise to correctly analyze the causes, develop relevant lessons learned, and implement appropriate corrective actions.
- Report and investigate precursor events to prevent more serious incidents in the future.
- Assure that individual site changes to firearms training are well documented.
- Train with unloaded weapons or with inert ammunition when handling new types of weapons or equipment (e.g., holsters and tactical add-ons) until adequate and safe proficiency is demonstrated.
- Upgrade training to insure that skills are acquired to meet an expanded threat spectrum.
- Conduct training with a view to sustaining a high level of readiness among Protective Forces personnel rather than maintaining periodic qualification

Closing Note:

Even equipment changes as simple as a flashlight and holster combination can present potentially deadly hazards. Supervisors must ensure personnel are adequately trained and can demonstrate proficiency in handling newly issued equipment before ammunition is issued.

The Office of Health, Safety and Security requires no response to this transmittal. If you no longer wish to receive this information, please contact Robert Czincila [(301) 903-8008; robert.czincila@hq.doe.gov]. If you are aware of other organizations that may wish to receive this information, please contact Mr. Czincila.

Attachments

- ORPS Operating Experience Report NA-LASO-LANL-BOP-2007-0015
- ORPS Operating Experience Report FE-HQ—SPR-SPRO-2005-0002
- ORPS Operating Experience Report NA--NVSO-WSIN-NTS-2006-0002
- Lessons Learned BOP-2008-0001
- Lessons Learned 2000-RFO-KH-0003