Safety Tools Applied to Security Operations: Identifying Contributors to Unauthorized Weapon Discharges

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BIO

- Dan Pond is a human and organizational performance expert, with more than 30 years experience in government, industry, and academia, both in the US and overseas. His accomplishments have been recognized by such organizations as DoD, NNSA, and The Scientific Research Society, and his contributions chronicled in *Who's Who in America* and *Who's Who in Science and Engineering* among other publications. Much of Dan's work for DOE/NNSA over the past two decades has focused on ensuring operational effectiveness, safety, and security. As in the work to be presented today, these efforts include identifying and controlling contributors to operator errors that can result in adverse safety or security consequences.

UD Assessment Background

- Dec ‘08: NNSA Administrator:
  - 19 UDs between 2002 and 2008
  - Site/activities to review their *formality of operations*
- Feb ‘09: NA-70 convened *UD Summit*
  - LLNL: procedures, training CAs = no change
- Mar ‘09: NA-71 commissioned UD Assessment through NA-72
  - May ‘09: results detailed in report; some included in *Spring 2009 Performance Improvement Bulletin*

UD Review & Assessment Process

- Accessed 50+ 1992 - 2009 reports in ORPS and SSIMS databases
  - selection criterion: *UD event* circumstances like those in NNSA protective force training/ops
- Established a data set of 35 UD events
- Extracted error contributors
  - identified, potential, un(der)-documented
- Defined NNSA *UD Problem Space*
- Developed Path Forward *Considerations*

Example Contributors to Errors

- Information
  - e.g., poor procedures; inadequate system status
- Work Setting
  - e.g., distractions; environmental conditions
- Work Planning & Control
  - e.g., worker skill level; time pressure
- Worker Readiness
  - e.g., preoccupation; fatigue

UD Assessment Results I

- 69% of the UD events associated with *administrative* weapon handling tasks
  - assembly/disassembly
  - cleaning
  - loading/unloading
    - actions/decisions tied to 57% of all UD events
- 9% of the UD events were discharges into clearing barrels

UD Assessment Results II

- 54% of the UD events resulted from an accidental trigger pull or no trigger pull
  - equipment problems or incompatibilities
  - loss of weapon control
    - re-grip
    - catch
      - natural and trained responses
      - near miss reporting

UD Assessment Results III

- 46% of the UD events resulted from an intentional trigger pull
  - lack of *situational awareness*
  - >20% overall: weapon required trigger pull for disassembly/cleaning

UD Assessment Results IV

- 17% of UD events followed malfunctions or other anomalies
  - actual
  - planned/simulated
  - perceived
- ORPS *Performance Analysis* and *Causal Analysis* processes frequently yielded good assessments of management, trainer, policy-maker contributors to UDs

Un(der)-documented *Expected* Contributors

- Hours of Work
- Levels of Skill / Familiarity
- “Novices”
- Organizational Safety/Security *Culture*

What can be done to ensure consideration of these known error contributors in order to prevent and, as necessary, assess UDs and other adverse safety and security outcomes?

Path Forward *Considerations* I

- What are the current *best practices* to ensure that...
  - equipment specification, installation and maintenance practices effectively support efforts to reduce UDs?
  - shooters maintain weapon-ammunition *situational awareness*?
  - *proforce* training and operations emphasize both the physical (manipulation skills) and mental (conscious control) aspects of weapon handling?
  - workers' levels of knowledge/skill/familiarity are aligned with the challenges of both routine and non-routine operations?

Path Forward Considerations II

- Would additional measures be useful...
  - to further ensure safety when disassembling or cleaning weapons that require a trigger press?
  - after an anomalous condition is perceived to ensure that the next steps taken are safe?
  - to increase the use of clearing tubes or other safety devices so that a greater proportion of *administrative task* UDs are safely contained?
  - to enhance NNSA's ability to identify and mitigate shortcomings in safety and security *culture*?

Path Forward Considerations III

- What can be done to...
  - ensure performance to NNSA standards/requirements by individuals previously trained in other organizations?
  - enable blame-free reporting and evaluation of Near Misses?
  - promote routine application of *questioning attitudes and behaviors* in protective force planning and operations?

Error Contributor Self-Assessment

- For each Contributor/Consideration ask...
  - Is this relevant to my organization?
    - If “No,” ask...How do I know?
    - If “Yes,” ask...
  - Is it controlled?
    - If “Yes,” Confirm periodically
    - If “No,” ask..
  - Do I need assistance?
    - If “No,” Begin assessment and control
    - If “Yes,”...

NNSA Field Augmentation Support

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