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Refining Explosive Safety Outreach

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The 3Rs.mil home page. A variety of materials and activities for differing audiences are available from the website.

Photo courtesy of CALIBRE Systems, Inc.

Field Notes

Refining Explosive Safety Outreach

by Geoff Carton [CALIBRE Systems, Inc.] and
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Explosives safety awareness programs must identify the target audience and communicate easily understood concepts. To be effective, an audience must apply the concepts presented; however, this is not enough. The program and its message must also be adaptable to a variety of audiences based on how they assimilate information. The U.S. Department of Defense (DoD) has at least 100 years of safety education experience. Over this time, explosives safety messages underwent several evolutions.

Early DoD efforts focused on munitions that soldiers brought home as war trophies and that souvenir hunters recovered from military sites. News articles post-World War I and II discouraged people from collecting munitions by using graphic descriptions of explosive safety risks involved in handling munitions. The target audience post-World War II broadened to incorporate communities near military installations, including installations that were used for war-time training but had returned to public use. News articles post-World War II describe an intensive DoD program to remove munitions from lands once used for live-fire training and testing. They also informed the public of hazards associated with collecting scrap metal and souvenirs from these areas. The effectiveness of the munitions removal effort was limited by the then-current technology and at many sites only a surface clearance was completed.

Despite DoD efforts to communicate explosives safety messages, injuries to soldiers and civilians of every age continued. DoD began to examine the further cleanup of munitions sites circa 1983 after a detonation killed two children playing with a munition they encountered near their home. When DoD's Defense Environmental Restoration Program was established in 1986, its main goal was preventing hazardous chemical contamination, but efforts to detect and dispose of unexploded ordnance, which endangers soldiers and civilians alike, became more organized. Munitions kept as souvenirs, collected for their historical value, or simply disturbed by human contact on military ranges have also injured or killed a number of adults. These incidents and differing audiences led DoD to develop a variety of safety materials based on the program and funding rather than consistent message.

In 2000, an explosive incident that involved trespassing on an active range and the removal of

munitions killed one teenager and injured another. This led the U.S. Army to review DoD explosives safety messages and programs. The review found that DoD military services had different messages. Some focused on soldiers, while others focused on the public or specific risks (e.g., former ranges, souvenirs). While well intentioned, the differing materials diluted their effectiveness. This led the Army to develop a core message: the 3Rs (**Recognize, Retreat, Report**) that focuses on dangers munitions pose and encourages safe behavior should a munition or suspect munition be encountered. The objective was to create a safety message simple enough to be understood by all ages but broad enough to address a variety of audiences (e.g., souvenir collectors, construction workers) and activities (e.g., outdoor recreation, divers).

With input from focus groups that included risk communicators, explosives safety professionals, parents, and educators, the Army crafted the 3Rs as its core explosives safety message. The Army developed educational materials including safety guides, briefings, signs, and explosives safety presentations around this core message. The goals of the 3Rs Explosives Safety Education Program are to:

- * Provide a simple, consistent, and easily remembered message;
- * Eliminate redundant efforts and contradictory messages; and
- * Develop 3Rs Program educational material to be
 - * General enough to apply to a variety of audiences and activities; or
 - * Tailored to specific audiences (e.g., children), activities (e.g., fishing, construction), or communities (e.g., civilians, military families).

After 2000, the 3Rs Program became DoD's basis for informing the public of dangers associated with encountering munitions and avoiding injury. A 2011 study of munitions-related incidents on properties no longer under DoD control determined that munitions were intentionally disturbed in at

least 20 of the 24 incidents and exposed on the surface in every case. In addition, the majority of the individuals injured or killed were male. As a result, the Army increased the focus of its 3Rs Program for at-risk populations (e.g., children, particularly boys because over half of the fatalities were children and 90 percent of the children were boys) and behaviors (e.g., moving or disturbing munitions). The Army then initiated an independent assessment to evaluate the effectiveness of 3Rs Program materials. Rather than employing a traditional questionnaire or survey, the assessment consisted of nearly 100 one-on-one dialogues with children ages 9–12 at schools near former military installations that represented a variety of communities and cultures.

The assessment indicated that participants exhibited an understanding that munitions were dangerous, and civilians should not move or disturb them. However, it also identified knowledge gaps and unintended responses for important details of the 3Rs message. Some of the knowledge gaps indicated student confusion regarding the use of different terms and explanations for munitions-related concepts. Presentations introduced munitions-related vocabulary that students needed to learn to fully understand the core message. The assessment indicated that most students could not understand every concept presented during a one-time presentation. Additionally, the result was a muddled understanding of how dangerous munitions could be and confusion about the meanings of retreat and report.

The evaluation indicated that some of the 3Rs methods used to communicate its message (e.g., classroom, printed media) were more effective for certain audiences. An individual visiting an area where munitions are present could benefit from receiving a pamphlet about the potential hazard and appropriate safety behaviors, while people living and working in communities near sites with munitions benefit most by attending a 3Rs presentation where they can ask questions. In military families, children are likely to complete 3Rs coloring books with their parents, benefiting the entire family. Finally, soldiers who already understand the dangers associated with munitions may be more effectively influenced by public service announcements focusing on their professional responsibilities and the potential danger that munitions present to their families.

Refinements the Army made to the 3Rs Program since 2011 have focused on recognizing the dangers associated with munitions over understanding munitions-related concepts. These refinements also better emphasize safe behaviors over other responses (e.g., curiosity) or reactions (e.g., the desire to identify the item, the instinct to pick up an item) when a

munition or suspect munition is encountered. The Army's message evolved to be more uniform:

- * **Recognize** when you may have encountered a munition and that munitions are dangerous.
- * **Retreat**, do not approach, touch, move or disturb it, but carefully leave the area.
- * **Report** the munition to local law enforcement and advise them of what you saw and where you saw it.

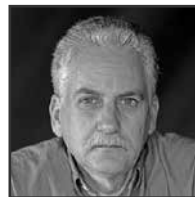
In 2015, the Army redesigned its 3Rs Program website (<http://3Rs.mil>) making it easier to use, accessible to mobile devices, and better at conveying the danger associated with munitions and safe behaviors for given audiences (e.g., children, teens, adults).¹ A variety of 3Rs Program materials including files for printing, videos, and presentations are available from the redesigned 3Rs website. Its new design allows for easier navigation to content appropriate for a variety of groups: children and families, military and their families, community, and workers.

The Army's 3Rs Program is now generally accepted as DoD's 3Rs Program. To remain effective, DoD 3Rs Program must continue to evolve and adapt. ©

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1. "3Rs Explosives Safety Education." DoD Environment, Safety and Occupational Health Network and Information Exchange. Accessed 16 August 2017. 3rs.mil.