



DEPARTMENT OF THE ARMY
US ARMY DEFENSE AMMUNITION CENTER
1 C TREE ROAD
MCALESTER OK 74501-9053

ATCL-AC

04 May 2016

SUBJECT: CJTF/CJFLCC-OIR BLAHA Design and Risk Mitigation

1. **Purpose.** To provide information and clarification on the minimum BLAHA design criteria and associated risk mitigation.
2. **Executive Summary.** This information paper highlights the proper use of HESCO barricades for ammunition and explosives (AE) storage under BLAHA/AHA criteria.
3. There are three ways to reduce risk at AE storage and holding locations:
 - a. Reduce Net Explosive Weight (NEW)
 - b. Move AE to an area that minimizes risk to exposed sites (e.g. personnel, equipment)
 - c. Move personnel and equipment outside of the Inhabited Building Distance/Public Traffic Route (PTR) arcs associated with the AE storage site
4. When properly constructed, HESCO barricaded BLAHA designs can enhance safety and reduce fragmentation risk to personnel, facilities, and equipment from low angle high speed fragments. HESCO barricades DO NOT however, reduce the minimum requirements for inhabited building distance (IBD) or public traffic route distance (PTRD).
5. When used in the construction of AE storage sites, HESCO barricades are intended to intercept high-velocity low angle fragments thus reducing personnel injuries and equipment damage and minimizing propagation between adjacent AE stacks. Employment of barricades, including covered cell designs however, does little to prevent effects of blast overpressure (blast wave) and subsequent reactions that may destroy personnel, equipment and adjacent munitions. HESCO barricades can be used to reduce internal quantity distances such as inter-magazine distance (IMD) and intra-line distance (ILD) but not external distances such as IBD and PTRD. In the event of an unintentional detonation, barricades are used to reduce propagation from one storage location (cell) to the next; thus enabling forces to preserve assets and mission capabilities. For overhead protection, depending on the design, top cover could negatively impact adjacent storage locations depending on the thickness of the cover.
6. Specific designs are available for reference on the Ammunition Community of Practice (Ammo CoP) website in the folder named "USATCES Tool Box" (See listing of figures available for review at the link below):
<https://acc.dau.mil/CommunityBrowser.aspx?id=737832&lang=en-US>

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- a. Figure 1, Using Technical Paper-15 for Up To 8,818 Lbs. Net Explosives Weight
- b. Figure 2, BLAHA/AHA Criteria Using DODM 6055.09-M for Up To 5,500 Lbs. Net Explosives Weight

7. Key points to remember:

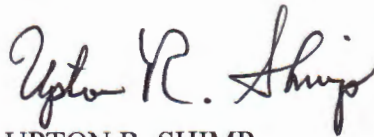
a. ***BARRICADES ALONE DO NOT PROVIDE PERSONNEL PROTECTION.***

(1) While barricades offer protection to personnel from high-velocity low angle fragments, they do not protect from high angle, lobbed fragments, firebrands, thermal effects and kicked-out items.

b. Barricades provide NO significant protection from blast overpressure beyond the immediate area of the barricade.

c. It is critical that explosives safety personnel, engineers, and master planners perform an initial requirements analysis and define the layout of the proposed site in sufficient detail to support explosive safety analysis.

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