*US Army Technical Center for Explosives Safety (USATCES), McAlester, OK 74501*

# Explosives Safety Bulletin

**March 2008** **https://www3.dac.army.mil/es**

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## *3rd Field Commander's Ammunition Logistics Seminar*

Gen Benjamin S. Griffin, CG Army Materiel Command

The US Army Joint Munitions Command (JMC) and Defense Ammunition Center (DAC) hosted the 3rd Field Commander's Ammunition Logistics Seminar in McAlester, Oklahoma, 12-13 December 2007. The focus of this year's seminar was explosives safety. It was attended by 92 participants from Army organizations worldwide, including the Southwest Asia (SWA) Area of Responsibility (AOR), US Navy, and Canadian Armed Forces.

The seminar, an initiative of Gen Benjamin S. Griffin, Commanding General, US Army Materiel Command, included a day and a half of informational briefings and discussions and a half day of case studies. Many of the briefings and subsequent discussions focused on explosives safety challenges in an operational theater and included first-hand insight from numerous current and formally deployed individuals, as well as the coalition perspective from the Canadians. The three case study groups focused their efforts on the three major phases of operations, Deployment, Operations/Sustainment, and Reposture/ Recovery identifying explosives safety issues and recommendations for improvement. The final report from the seminar is being staffed and will be briefed to Gen Griffin.

In this issue



The EXPLOSIVES SAFETY BULLETIN (ESB) targets the ammunition/explosives community. Contents are not necessarily the views of or endorsed by the Department of the Army, the Department of Defense, or any other US Government agency. The editorial content of the ESB is the responsibility of the US Army Technical Center for Explosives Safety (USATCES), McAlester, OK. Contributions are welcome. Contact information: E-mail address: **mcal.dac.bulletin@conus.army.mil.** Postal address: Explosives Safety Bulletin, ATTN: SJMAC-ESM, 1 C Tree Road, Bldg 35, McAlester, OK, 74501-9053. Phone: (918) 420-8771, DSN 956-8771. Datafax: (918) 420-8503, DSN 956-8503.

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# *AUTOMATED QUANTITY-DISTANCE (QD) SPREADSHEET*

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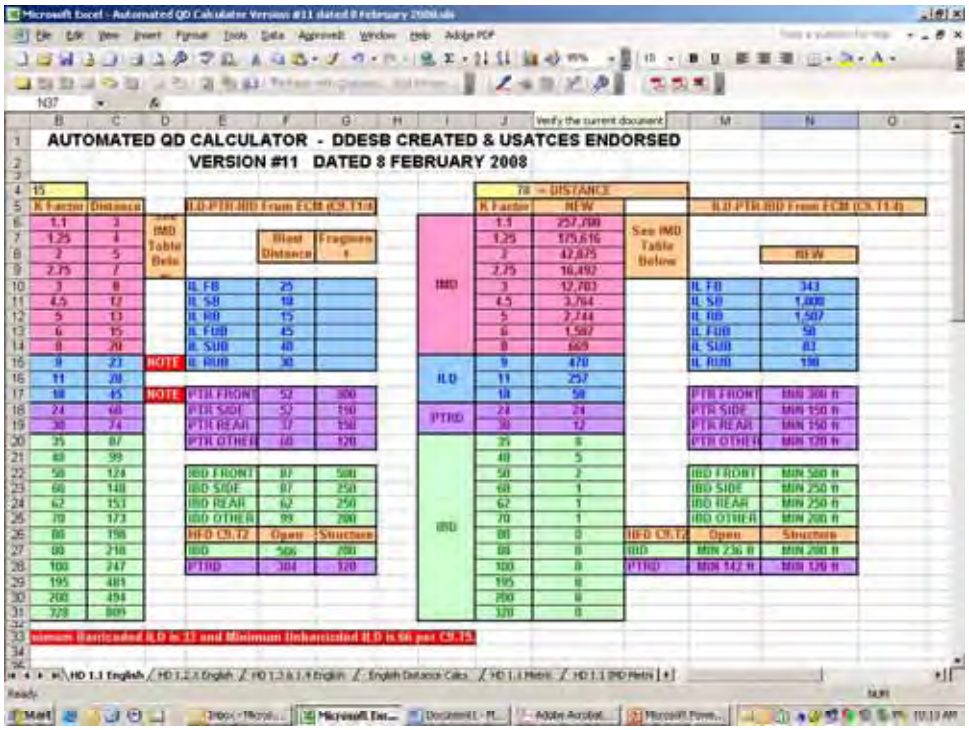
Due to more complex site planning issues and use of automation over the past several years, the Army and DOD have been slowly moving away from quantity distance (QD) tables provided in the explosives regulations. We are migrating towards the use of the formulas that derived these tables in determining separation distance and/or allowable Net Explosives Weight (NEW). These formulas can be complicated to use. This led people to develop their own spreadsheets assisting them with their QD calculations. Many of these have been passed down from individual to individual and modified by successive users to meet their own needs. This has perpetuated built-in formula errors.

The Department of Defense Explosives Safety Board (DDESB) recognized the need for a singly managed automated tool that was user friendly. It needed to provide more reliable and consistent answers. DDESB developed an Excel spreadsheet that will calculate either allowable NEWs based upon a given separation distance, or the required separation distance for a given NEW. The spreadsheet is designed for either English or metric calculations.

It is designed to assist personnel from all the Services who are responsible for developing or reviewing explosives licenses, developing or reviewing explosives safety site plans, or those with other duties involving QD calculations. Army personnel may see K-Factors that they are unfamiliar with and which appear to make the various worksheets look cluttered. These might be necessary for other users, since this is a general tool for all Services.

The spreadsheet consists of several worksheets. Each worksheet provides the user with specific formulas for all the Hazard Divisions (HD). Personnel should first click on the HD worksheet they might be interested in using. The picture below depicts a view of the HD 1.1 page. Users need to only input the desired NEW or distance in the appropriate yellow cell and hit "Enter" on their keyboard. This will then populate the worksheet. The spreadsheet has built-in warnings to alert users if a given answer is outside regulatory limits or if a distance is below minimum values. Generally, red shaded areas are calculations in the Intermagazine K-Factor ranges, blue shaded areas are calculations in the Intraline K-Factor ranges, purple shaded areas are calculations in the Public Traffic Route K-Factor ranges, and green shaded areas are calculations in the Inhabited Building Distance K-Factor ranges. Orange shaded areas are column labels or are provided for information purposes.

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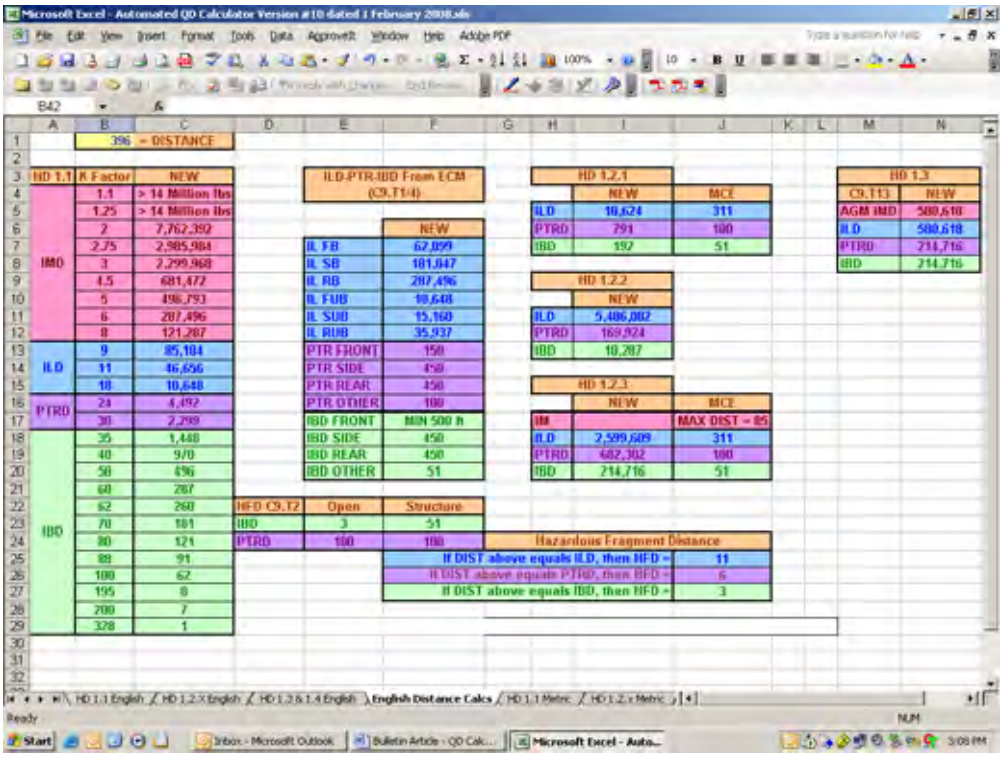
## QD SPREADSHEET *continued from page 2*

The DDESB Staff has shared this tool and allowed distribution to personnel in the field. The US Army Technical Center for Explosives Safety (USATCES), in an effort to assist our Army customers and the ammunition and explosives community in general, places the latest version of the Automated QD Calculator available on two websites; on AKO on the DAC Explosives Safety Ammunition Toolbox at https://www.us.army.mil/suite/page/218481 under *Tools*, and on the DAC-USATCES website at https://www3.dac.army.mil/es/documents/QDCalculatorVersion12.xls.

Each web version is identified by a sequential version number and the date of the version. At the time of this bulletin's publication the current version is Version #11 dated 8 February 2008. As improvements or modifications are made based on changes to the regulation, user comments, or errors identified and corrected, the most up-to-date version will be placed on both websites and the old version removed. We encourage users to check either of the above websites often to ensure they are working with the latest version of the calculator.

During the past several months users have identified several improvements, one which created a separate distance tab that allow users to input a specific distance in one location and provides the allowable NEWs for all HDs. Because this tool is available for use by all the Services, some suggested changes that are user specific cannot be accommodated. The DDESB and USATCES have made every attempt to identify errors within the program and correct them. However, as with any automated program, errors may still exist. Therefore, we encourage users to identify errors, or make suggestions for improvements, and forward them to MCAL.DAC.EST.TOOLBOX@conus.army.mil. We will then forward them to the program's originator for correction and/or consideration to be included.

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Questions/Comments

# STOP!!!

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## Stop Taping Grenade Safety Pins/Pull Rings and Levers NOW!

Grenades that are taped

- Once the tape is removed, a sticky residue may still be present on the grenade body making it difficult for the thrower to release the grenade or maintain his or her accuracy.

- Significant numbers of taped grenades have been declared to be too hazardous to handle and thus been reclassified to an unserviceable condition code and scheduled for demilitarization. Because otherwise "serviceable" grenades are destroyed, a critical shortage of grenades could occur and the Warfighter impacted.

Taping grenades poses a significant risk of injury or even death to personnel. Recently, three Soldiers were seriously injured, one permanent partially disabled, from a diversionary grenade that had been taped. As they were attempting to remove the tape, the grenade was activated and detonated in the Soldier's hand.

Taping grenade pins and/or levers has been practiced by Soldiers for years, and for a variety of reasons. The most common is a perceived safety issue that the safety pin could inadvertently snag on something and be pulled from the grenade. In fact, until recently, FM 3-23-30 authorized taping for airborne operations. However, that authorization was rescinded with Change 1 to the FM dated 27 November 2006.

The fact is, taping grenades is very dangerous and exposes both the user and ammunition supply personnel to unacceptable risks. These risks are:

- The safety pin is not visible or only partially visible. The Soldier and ammunition handler cannot be sure if the pin is properly engaged and may initiate the grenade upon removal of the tape.

- Significant delays can be expected during preparation to throw the grenade, especially in a "life or death" situation. Quick reaction and employment simply is not possible when the safety pin and lever are taped.

Additional information on the safety risks associated with taping can be found in Ammunition Information Notice (AIN) 06-08. AIN 06-08 can be accessed using your CAC at https://www.us.army.mil/suite/page/218481, under Safety Alerts.

Due to the concerns over taping grenades and the perceived safety issue with the pull pin, the US Army has obtained a license to manufacture, procure, and use the Combined Systems Inc. *Pull Safe™ Safety Clip* also known as the CSI Restraint System. Grenades with the *Pull Safe™ Safety Clip* are expected to be fielded in the not too distant future. Initial fielding will probably be on the M213 Fuze used in the M67 Grenade, with other grenade fuzes modified after that.

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Grenade with CSI Restraint System

# Deployment Data Reporting

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The Department of Defense (DOD) leadership and the Secretary of the Army have become very interested in the relationship between Soldiers lost in garrison or off duty accidents and their combat deployment history.

The Army Safety Office (ASO) and the US Army Combat Readiness Center (USACRC) have received numerous inquiries necessitating significant research and numerous man hours searching for this data. This has been a time consuming effort that normally does not meet the suspense requirements from the Army and DOD staff. In order to position the USACRC to answer these questions in the future, USACRC is requiring reporting agencies to include, as a minimum, the end date of the last combat deployment for all soldiers involved in a reportable Army accident. A complete deployment history is desired. As a back up to the deployment data, the social security number of the individual involved will also be required when submitting the initial accident notification to the USACRC.

These two pieces of information will be submitted to the USACRC in the accident synopsis section of the DA Form 7305-R and the DA Form 7306-R. These reporting requirement changes will be incorporated into a future version of DA PAM 385-40. Eventually this information will be automatically available to the USACRC, but until then we need your assistance in meeting the information requirements of the Army Secretary.

Please disseminate this requirement to the safety offices within your commands so that the data can be gathered during the initial reporting phase of the accident reporting and investigation process.

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Questions/Comments

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# Ammo War Trophies

A US Soldier waiting for helicopter extraction from a landing zone was carrying a RPG in his rucksack that had been recovered from a weapons cache. As a CH-47 helicopter was landing to perform the extraction, the RPG functioned, killing the Soldier, and injuring three other coalition force Soldiers and seven Iraqi Army Soldiers.

Ammo is designed to do one thing, Kill.

Ammo as a war trophy is never a good idea.
You never know when it will do what it was designed to do.

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Questions/Comments

# Accident Lessons Learned

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Recently the hot gas detonation chamber at the Hawthorne Army Depot, Hawthorne, Nevada, experienced an explosion during a decontamination cycle. The explosion caused no injuries, but it completely destroyed the decontamination chamber. The approximate cost of the damage is $800,000. At the time of the explosion, the decontamination chamber was processing 750-pound bomb casings as part of a test project to determine the effective operating procedures necessary to remove small amounts of explosives remaining in the bomb casings after a melt out process. While tests were being done with varying numbers and configurations of bomb casings, there was no comprehensive test plan.

The purpose of the hot gas detonation chamber is to render explosive contaminated material safe for unconditional release and use. The unit operates by forcing air heated to 550 degrees Fahrenheit into a chamber containing explosive contaminated material. A temperature of 550 degrees is above the boiling point of most explosives. The explosive contamination boils away as vapors into the air. The air containing the vapors is then routed into a diesel furnace which burns the vapors into safe components. The hot gas decontamination technology shows great promise but its use is limited to small or trace amounts of explosives on each item.

Evidence indicates that one bomb casing with an excessively large accumulation of explosives was placed in the hot gas chamber. About one hour into the operational cycle a detonation occurred in this bomb casing. Fortunately, there were no operators present at the time, so no one was hurt.

Analysis of the event thus far leads to the following lessons learned:

- Multiple visual inspections were done to prevent such a round from ever entering the chamber, but visual inspections can never be 100% effective. The effectiveness of visual inspections depends on the items being inspected and the conditions the inspections take place under (e.g. adequate lighting, physical positioning of the material.) Take efforts to make your inspection process as easy as possible for the inspector.

- Since it is an ammunition operation, documented procedures for testing include a test plan and hazard analysis. Any changes or new test configurations should be added to the test plan and appropriately staffed.

- The countermeasures taken for hazards identified in an explosive hazard analysis often depend on the Maximum Credible Event (MCE). A MCE can be thought of as the worst thing that can *reasonably* be expected to happen. Using a MCE that is less than the actual maximum can result in inadequate safety measures, decisions to accept unnecessary risk, and potential loss of life or mission capability.

In this accident, no one was in the building at the time of the explosion. That was not the usual situation. Explosives operations require written procedures based on hazards analysis and a risk assessment that considers the MCE. Review and update the hazards analysis and procedures whenever you change any aspect of the process. Limit personnel exposure as part of process controls – remember the cardinal principle.

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Questions/Comments

# Accident Lessons Learned

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Recently, members of an engineering unit were preparing to conduct their final range clearance after completing demolition training. The range detail had policed the range and gathered up the unused explosives material. Rather than destroying the excess material by approved means of detonation, they decided to burn the material. A small fire was started and then the unexpended explosives, which included C-4, Det Cord, M12 Shock Tube, and possibly other explosives material, were added to the fire. A very short time later the material exploded injuring five Soldiers. Personal protective equipment was not being worn by all the Soldiers at the time of the explosion. Though all five Soldiers survived, one suffered permanent loss of vision in both eyes, one suffered permanent partial loss of vision in both eyes, and a third sustained injuries to both eyes, but it is not thought that loss of vision will occur. Additional injuries included burns, lacerations, shrapnel wounds, and possible permanent partial hearing loss.

remains after the explosion

What lessons can be learned from this accident?

- Safety is inherent in training to standard
- Experience sometimes leads to complacency
- Leaders must be engaged
- Everyone must follow Unit, Army, and Range SOPs
- Utilize Personal Protective Equipment

**Finally, if you see something unsafe, STOP IT!**

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Questions/Comments

# Accident Lessons Learned

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A recent mishap with an Un-manned Aerial Vehicle (UAV) in the theater has increased the awareness that UAVs are being operated in the vicinity of ammunition supply points (ASP). Because logistical and operational limitations have brought airfields and ASPs in close proximity, we need to ensure communications between airfields and ASPs are a vital part of daily operations. Ammunition has to be stored and moved, and aircraft will maneuver through and across the arrival and departure zones; so it is up to us to conduct both operations as safely as possible.

The US Army Technical Center for Explosives Safety (USATCES) has asked the Aviation Safety Officer (ASO) community to include the ASP in airfield planning and operations. The ASP needs to include the airfield in their plans. If we are going to re-warehouse or ship large amounts of explosives, the airfield may be able to route traffic as far away as possible that day to reduce the threat to ammunition in the open.

If you have ammunition storage or handling procedures that may be exposed to arriving or departing aircraft (manned or unmanned), the following countermeasures will increase your explosives safety posture:

Ensure that communications exist between the ASP, Airfield Operations, EOD, and Fire and Emergency services. Fire resulting from a crash is the likely hazard to ammo and fuel, but uploaded aircraft would also present a blast and fragment hazard.

Ammunition in earth-covered magazines (ECM) is at a lower risk to an aircraft mishap than ammunition stored in the open. If ECMs are available, insist they are used for storage of ammunition that could be hazarded by an aircraft mishap.

For ammunition stored in the open, reduce the risk by:

- Ensuring that ammunition is stored inside MILVANs that are closed when not in use,
- Emplacing barricades made of earth or HESCO Bastion-type bins around ammunition pads with the opening away from arrival and departure zones, and
- Ensuring ammunition stored in the open is placed as far away from the airfield as possible.

Keep all vegetation under control. A mishap on a runway could spread fire to the ASP. Just because the grass is on the airfield side does not mean it will not affect you. Insist on a well-maintained firebreak.

If you are involved in the design phase of an installation or Forward Operating Base (FOB), recommend that ASPs are not built in the arrival and departure zones of the airfield. If not avoidable, use the risk management steps listed above to reduce the risks.

Visit your local ASO frequently. Get them involved in your planning. They are well trained, safety-focused, and vital to maintaining a low risk safety posture.

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Questions/Comments

# Accident Lessons Learned

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**Safety Briefings Are Given for a Reason!**

The Soldier was participating in a Military Police Basic Course. The class had received briefings on safety requirements when dealing with ammunition, as well as on the hazards of handling unexploded ordnance (UXO). Nevertheless, during a training exercise, the Soldier picked up an artillery simulator that had failed to function, cut it open, dumped out the filler (pyrotechnic mixture), and made two attempts to light the filler – first with matches (which didn't work), and then with a cigarette lighter (which did). The resulting ignition caused third-degree burns to the Soldier's right hand, first-degree burns to his face, and thermal burns to his eyes. His injuries have required the performance of multiple skin-graft procedures.

Even the best precautionary information can't provide protection if personnel don't apply it in their conduct of daily operations, and especially if they knowingly disregard or violate it. Safety provisions must be so thoroughly understood, and a hazard-sensitive mindset must be so consistently employed, that they become an automatic part of an individual's performance of any operation where possible safety risks are present – which always applies to any activity where contact with ammunition and explosives is involved.

To reiterate the precautions to be taken when dealing with duds or unexploded ordnance (UXO) :

- After identifying potential UXO, do not move any closer to it. Some types of ordnance have magnetic or motion-sensitive proximity fuzing that may detonate when they sense a target. Others may have self-destruct timers built in.
- Do not transmit any radio frequencies in the vicinity of a suspected UXO hazard. Signals transmitted from items such as walkie-talkies, short-wave radios, cell phones, citizens' band (CB) radios, or other communication and navigation devices may detonate the UXO.
- Do not attempt to remove any object on, attached to, or near a UXO. Some fuzes are motion-sensitive, and the UXO may explode.
- Do not move or disturb a UXO because the motion could activate the fuze, causing the UXO to explode.
- If possible, mark the UXO hazard with a standard UXO marker or with other suitable materials, such as engineer tape, colored cloth, or colored ribbon. Attach the marker to an object so that it is about 3 feet off the ground and visible from all approaches. Place the marker no closer than the point where you first recognized the UXO hazard.
- Leave the UXO hazard area.
- Report the UXO to the proper authorities.
- Stay away from areas of known or suspected UXO. This is the best way to prevent accidental injury or death.

| UXO SAFETY WARNINGS | |
|---|---|
| | **When you see UXO, stop. Do not move closer.** |
| | **Never transmit radio frequencies (walkie-talkies, cell phones, citizens' band radios).** |
| | **Never attempt to remove anything near a UXO.** |
| | **Never attempt to touch, move, or disturb a UXO.** |
| | **Clearly mark the UXO area.** |
| | **Avoid any area where UXO is located.** |

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Questions/Comments

# Accident Shorts

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The following Accident Shorts are provided for lessons learned and accident prevention purposes only. Though some of the accidents we included occurred off-duty and/or off-post, they are included to increase awareness that ammunition and explosives related accidents can occur anytime, anyplace. To preserve our most precious asset, our Service Members and their Families, we must all learn from these mistakes and be ever vigilant. It is every person's duty that if they see something unsafe, to **STOP IT!**

- A Soldier had loaded a magazine into his 9mm pistol, and had charged the pistol to chamber a round. He then began to put the pistol in its holster when the weapon discharged, with the bullet striking the Soldier in his left calf.

- A group of Soldiers was sitting on the front porch of their quarters conversing. One of the Soldiers applied a heat source to the primer end of a 5.56mm round, which caused the round to function, striking and injuring another Soldier in the group.

- While cleaning out a storage bin that held training materials, a Soldier removed an unpackaged M604 anti-tank mine practice fuze that was missing its safety clip, and set it aside. Later, the Soldier removed a large piece of concrete from the bin, and dropped it on the fuze, causing the fuze to function and sending shrapnel into the Soldier's ankle.

- A Soldier was handling a handgun in the presence of his spouse and another couple when the weapon fired, with the bullet striking the Soldier in the neck, fatally wounding him.

***NOTE:*** *The above accident summaries are restricted to use within DOD, and are solely for accident prevention purposes. They are based on the best information available at time of issuance, and may contain statements or details that later investigation or events indicate to be inaccurate. Actual causes of incidents, as well as recommended corrective actions, will be determined by formal investigation. Mention of possible incident causes is intended only to promote maximum value from "lessons learned" in future operations.*

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# Lightning- The Underrated Killer

Lightning is one of the most beautiful displays in nature. It is also the second most deadly natural phenomena known to man, exceeded only by floods. In the US, there are an estimated 25 million lightning flashes each year. According to *Storm Data*, a National Weather Service publication, over the last 30 years the US has reported an average of 62 lightning fatalities per year and 300 injuries per year. Due to under reporting, the figures are realistically much higher.

**Lightning Safety**

The National Weather Service recommends following the "30/30" rule. When lightning is seen, count the time until thunder is heard. If it is 30 seconds or less, seek shelter immediately and stay there for at lest 30 minutes after the last rumble of thunder is heard. Lightning can strike as far as 10 miles from the area where it is raining.

**Outdoor Lightning Safety**

If you are caught outside in a storm, always look for appropriate shelter. Do not take any chances—lightning can use you as a path to the earth just as easily as it can any other object. If you are on the lake in a boat, return to shore immediately or if in a swimming pool get out of the pool and take shelter in a building. If a building is not available, seek shelter in a hard top car. The car acts like a Faraday Cage and will safely direct the lightning to ground. A Faraday cage is a metallic enclosure that prevents the entry or escape of an electromagnetic field (EM field). If there are no cars or buildings available and you must stay outside during the thunderstorm, find shelter in dense woods or a thick grove of small trees. You should avoid taking shelter under isolated trees, picnic shelters and covered bus stops, as they offer no protection.

If you are trapped in an open space such as a field, get as low as you can in a valley or ravine. Put your feet as close together as possible and crouch down with your head as low as possible without touching the ground. Never lay on the ground. After lightning strikes the ground, there is an electric potential that radiates outward from the point of contact. If your body is in the area, current can flow through you. You never want the current to have the ability to pass through your body. By making your body as low to the ground as possible and minimizing the amount of your body in contact with the ground, you can lower the possibility of a lightning related injury. If a strike were to occur near you, the current would have a difficult time flowing through your body in this position. If lightning is about to strike near you, it might give a brief warning. Your hair may stand on end, your skin may tingle, you may hear a crackling sound, and keys or other metal objects may vibrate.

**Indoor Lightning Safety**

Lightning injuries are rare indoors, but to be safe, remember these indoor lightning rules:

- Do not talk on a corded telephone, don't take a bath or shower, and don't use electrical appliances. If lightning strikes outside phone/cable lines, electrical wires or pipes, the current can travel indoors.
- Do not watch lightning from an open door or window. It is almost as dangerous as staying outside

**Helping a lightning Strike Victim**

Only about 10% of people who are struck by lightning are killed, leaving 90% with various degrees of disability. If a person is struck by lightning, call 911 and get medical care immediately. Cardiac arrest and irregularities, burns, and nerve damage are common in cases where people are struck by lightning. However, with proper treatment, including CPR if necessary, most victims survive a lightning strike. You are in no danger helping a lightning victim. The charge will not affect you.

**No matter what precautions are taken, some may still become an unfortunate victim of lightning.**

**Lightning Safety Week: June 22-28, 2008**

**Lightning Information:**

Website – http://www.lightningsafety.noaa.gov/ National Weather Service Lightning Safety
Website – http://www.nws.noaa.gov/ National Oceanic and Atmospheric Administration
Website - http://www.crh.noaa.gov/crh/ Central Regional Office
Website - http://www.lightningsafety.com National Lightning Safety Institute

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Questions/Comments

## Safety Gram—Ammunition Safety

# CJTF-82 SAFETY DIVISION SAFETY GRAM

1 Mar 08

## Ammunition Disposal

There is a continuing problem with improper disposal of ammunition on BAF. Recently a forklift moving a concrete barrier encountered ammunition, including a 40mm grenade, placed under the barrier. The barrier was located 50 feet from the BAF fuel point. An explosion would have been catastrophic. Hundreds of rounds of small arms ammunition is discovered monthly at the BAF burn facility. This ammunition poses a threat to personnel and facilities. Leaders must ensure all ammunition is properly turned in. Additionally there are numerous amnesty boxes on BAF that may be used.


**We Can "BE SAFE" If,**
**"Standards Are Fully Enforced".**

COMMAND ATTENTION REQUIRED

# What's New

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## DA Pamphlet 385-65

Department of the Army Pamphlet 385–65, Explosives and Chemical Site Plan Development and Submission, has been published and is available for use. This DA Pamphlet was created to provide personnel with explosive safety site planning responsibilities with a comprehensive guide for developing and submitting explosives safety site plans (ESSP).

DA PAM 385–65 complements, but does not supersede, either DA PAM 385-64, Ammunition and Explosives Safety Standards, or DA PAM 385-61, Toxic Chemical Agent Safety Standards. The new DA PAM explains the fundamentals of site planning, the staffing process, and the review and approval chain of command. The requirements in the new DA PAM are applicable to both conventional and toxic chemical site plan submissions.

The intent of DA PAM 385–65 is to clarify required site plan content, as well as the site planning process with a goal of producing more consistent site plan packages throughout the Army. If site plan packages are thorough and complete, the results should reduce review and approval time. The new DA PAM 385-65 is available at the US Army's Publishing Directorate webpage: www.apd.army.mil/pdffiles/p385_65.pdf.

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## Latest Additions to USATCES Toolbox Webpage

- Maintenance Information Notice (MIN) for UTM (Ultimate Training Munitions) 5.56mm Man Marking Round (MMR)
- TACOM quarterly listing of Safety Of Use Message (SOUM), Maintenance Information Notices (MIN), Ground precautionary Messages (GPM)
- Latest version of the Automated Quantity-Distance (QD) Calculator (see article in this bulletin, page 2)
- Grenade Ammunition Information Notices (AIN)
- DA Pam 385-65, Explosive and Chemical Site Plan Development and Submission, 1 Feb 08
- M2 Machine Gun Information (continually being updated as new information is received)
- Water Barriers for Separation of Ammunition Stacks

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# Frequently Asked Questions

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This is a previous ammo help question being reprinted to clarify the answers previously given.

**Q** What is the NSN of the current authorized seals required to seal ammo boxes as well as the NSN of the crimper?

**A** Drawing number 8794342, Seal, Metallic, lists two approved seals, both manufactured by the Stoffel Seals Corporation. Their Alucast #911 is the type most commonly used to replace the factory applied seals on ammunition containers. The seal and wire can be purchased separately, or you can purchase the seal with wire attached. Three wire lengths are available, or the wire may be purchased on a spool and cut to the desired length. A seal press is available, although no NSN is listed. Seal presses you have on hand may work with the Alucast seal and save you buying new presses. The link to the Stoffel Seals home page is http://www.stoffel.com. The link to the Alucast seal and wire page is http://www.stoffel.com/SecuritySeals/Alucast_EC.html The page lists the NSN for the seal, the NSN for the wire, and also lists the seal with the wire attached. Review the information shown on the web site, or contact the manufacturer to ensure that the seal you select and order is appropriate for your needs.

It is important to note that seals can be ordered without wires, wires can be ordered without seals, and seals with wires attached come with different length wires. Be sure you are ordering the items you need.

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The last edition of the Explosive Safety Bulletin (December 2007) had a frequently asked question (FAQ) about how to convert ammunition items to inert training devices. The answer was brief and generated some questions. This article provides clarification on the requirements and answers those questions more in depth. **Please keep in mind, ammunition operations are inherently dangerous and should not be attempted by personnel not specifically trained to perform those operations.** The more dangerous an operation is the more oversight that should be provided.

**LIVE TO INERT**

The reference for converting ammunition items to inert training aids is DA Pam 385-64, Ammunition and Explosives Safety Standards, paragraph 13-6. All the references in the following text are to the DA Pam 385-64 unless otherwise noted. The requirements for converting ammunition items to inert training aids include:

- **MACOM commander approval** (now ACOM, ASCC, or DRO Commander), normally a 3-star General Officer, (paragraph 13.6.e).
- **Item manager approval** (paragraph 13.6.e), this is the inventory item manager located at the commodity command.
- **Explosive safety site plan** prepared IAW Chapter 5 approved by the US Army Technical Center for Explosives Safety (USATCES) and the Department of Defense Explosive Safety Board (DDESB) (paragraph 13-6.e.). This is initiated by the installation/ASG safety office (appendix J).
- **Standing operating procedure (SOP),** the safety office is also responsible for reviewing the SOP for compliance with explosive safety requirements.
- **Hazard analysis** is also required (chapter 2). The safety office may also prepare the hazard analysis.

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Additionally, any ordnance items converted to inert training aids must be properly marked (paragraph 13-6.c). Conducting a Hazard Analysis and writing an ammunition SOP are technical tasks that require training, experience, and technical expertise**.** It is un-likely that the combination of the three will exist at a unit level. The installation/ASG safety office may prepare most of the required documentation for this operation. Quality Assurance Specialist for Ammunition Surveillance (QASAS) personnel are trained in ammunition operations and provide technical support to the installation/ASG safety personnel (appendix J). Within the Explosive Ordnance Disposal (EOD) community, the Marine Corps EOD has been tasked with this mission by the FM 4-30.16, Multi-Service Tactics, Techniques, And Procedures For Explosive Ordnance Disposal In A Joint Environment.

**EXPENDED TO INERT**

Modifying an expended item to convert it for use as a training device is less complicated and does not require an explosive safety site plan. Once an item has been certified inert by a local ammunition supply point (ASP) or equivalent, it is no longer an explosive/energetic item. However, it must still be accounted for by national stock number (NSN) and properly marked IAW paragraph 13-6.c. Some items have specific procedures already developed for them to convert them to training aids after they have been expended. Check the operator's manual for the ammunition item (commonly referred to as the -10) for specific procedures. If the procedures are not found in the -10, the item manager may have more item specific information.

**FOREIGN AMMUNITION**

The **Armament Research, Development and Engineering Center** (**ARDEC)** EOD Technology Directorate has the Army Mission to inert foreign ammunition for both exploitation and training aids.

**AMMUNITION MARKING**

Ammunition has specific marking standards to make it readily identifiable by visual means. Inert ammunition or empty ammunition should be identified IAW paragraph 13.6.c. This includes drilling four holes through the item 90 degrees apart and marking it empty/inert. Although there are exceptions to this policy, ammunition not marked as inert should be considered live until proven otherwise. Live ammunition must be marked IAW MIL-STD 709C. Appendix F, FM 4-30.13, shows the color coding of specific items. Only persons familiar with ammunition items such as EOD personnel or QASAS should inspect ammunition items to determine if they are inert (paragraph 13-6.d).

Items may be inappropriately marked. The item shown in the picture is marked inert. However, it's doesn't have the required holes at 90 degrees which makes it suspect. If you discover an item like this that is suspect, contact EOD or a QASAS for assistance. If the item was found on or near a range it may be unexploded ordnance (UXO) and should only be approached, inspected, or handled by qualified personnel such as EOD or UXO technicians. UXO are military munitions that: (a) Have been primed, fuzed, armed, or otherwise prepared for action; (b) Have been fired, dropped, launched, projected, or placed in such a manner as to constitute a hazard to operations, installations, personnel, or material; and (c) Remain unexploded either by malfunction, design, or any other cause. If in doubt, call for assistance.

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