

AMMUNITION STORAGE IN MILVANS

1. MILVANS are treated as aboveground magazines.

a. Quantity-Distance (QD) calculations/limitations.

IF

(1) Total Net Explosives Weight (NEW) is not greater than 8,800 pounds then can used mixed compatibility per Chapter 14 of DA PAM 385-64.

OR

(2) Total NEW is not greater than 20,000 pounds and compatibility compliant per Chapter 5 of DA PAM 385-64.

THEN

(3) Inhabited Building Distance (IBD) will be 1250 feet and Unbarricaded Inter Magazine Distance (IMD) (K11) will be 300 feet from the MILVAN/Pad to the adjacent MILVAN/Pad.

b. One or more MILVAN may be placed together (side-to-side or back-to-back).

(1) If so placed, then the Total NEW is the summation of the NEW in each individual MILVAN.

(2) The QD arcs are figured from the outer edge of the MILVAN or group of MILVANS.

c. MILVANS can be converted to "earth-covered" magazines using the methods shown in the 8 June 1995 USATCES memo on the subject. However, MILVANS are not designed to support the weight of the required two feet of earth and simply covering MILVANS with earth is not recommended.

d. Other QD considerations may have to be considered depending on the location of the MILVAN such as nearby roads, facilities located on a training range, etc.

2. The metal skin on a MILVAN is less than 3/16 inches thick. Therefore each MILVAN or group of MILVANS will require protection from a possible lightning strike.

a. Each Lightning Protection System (LPS) must have two paths to ground. Ground rods must be a minimum of 10 feet long and a minimum of 3/4 inch in diameter. Ground rods should be either copper or copper-clad steel. The two ground rods should be located on opposing corners of the MILVAN and 3-8 feet beyond the perimeter of the MILVAN(s). Finally, the ground rods are to be at least 12 inches below the finished grade. Reference DA PAM 385-64, Table 12-1 for additional ground rod requirements.

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b. The LPS could be one of three types.

1) Single Mast (Recommended) - Metal pole is better than a wooden pole because the pole itself becomes the down conductor (See Figure).

2) Air terminals (24 inches tall) attached to the MILVAN corners.

3) Overhead Catenary Wire. The LPS must be designed so a 100-foot rolling ball will not touch the MILVAN or group of MILVANS. See DA PAM 385-64, Appendix H for graphic representations of the 100-foot rolling ball.

c. All lightning protection systems must be inspected and tested on a fixed interval. Records for each inspection/test must be maintained for 30 years (current Army requirement).

d. As an alternative to installing an LPS, the Commander may accept the loss of the MILVAN and all its contents due to a lightning strike. In addition, procedures must be in place to warn personnel of an approaching electrical storm and they must evacuate to beyond IBD until the storm has passed.

3. Each MILVAN or group of MILVANS used for storage of ammunition and explosives must receive Army and DOD siting approval IAW AR/DA PAM 385-64 and DOD 6055.9-STD. The US Army Technical Center for Explosives Safety's *Explosives Safety Site Plan Developer's Guide* is a tool that will guide personnel through explosives safety siting requirements and site plan preparation and submittal. The guide can be found on either the USATCES Ammunition and Explosives Safety Toolbox AKO website at <https://www.us.army.mil/suite/page/218481>, or the Defense Ammunition Center website at <https://www3.dac.army.mil/es/documents/spguide.pdf>.

4. In addition to explosives safety, all the ammunition and explosives security requirements found in AR 190-11 must be met.

5. The following storage conditions must be maintained:

a. All ammunition in the MILVANS must be stored in its approved shipping and storage box/container. All boxes must be closed. In other words, there can be no open containers of ammunition inside a MILVAN because they could change the munition's Hazard Division (HD).

b. The ammunition must be stored on pallets or other dunnage to provide air circulation within the MILVAN. The munitions should be stacked no closer to the MILVAN roof than 6 inches.

AMMUNITION STORAGE IN MILVANs

- c. Ammunition lot integrity and accountability must be maintained.
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- 6.** If the MILVAN has mechanical blocking & Bracing Bars, these bars may be used as an additional storage aid. They can be used for shelving to store multiple small lots of ammunition.

AMMUNITION STORAGE IN MILVANS



Proper Storage – Munitions Properly Packaged,
Munitions Stacked on Dunnage for Air Circulation,
Munitions Segregated By Ammunition Lot w/Magazine
Data Cards for Accountability



Mechanical Bracing Bars Used For Shelving

AMMUNITION STORAGE IN MILVANS



Improper Storage of Unpackaged Munitions



Improper Storage of Munitions

AMMUNITION STORAGE IN MILVANS



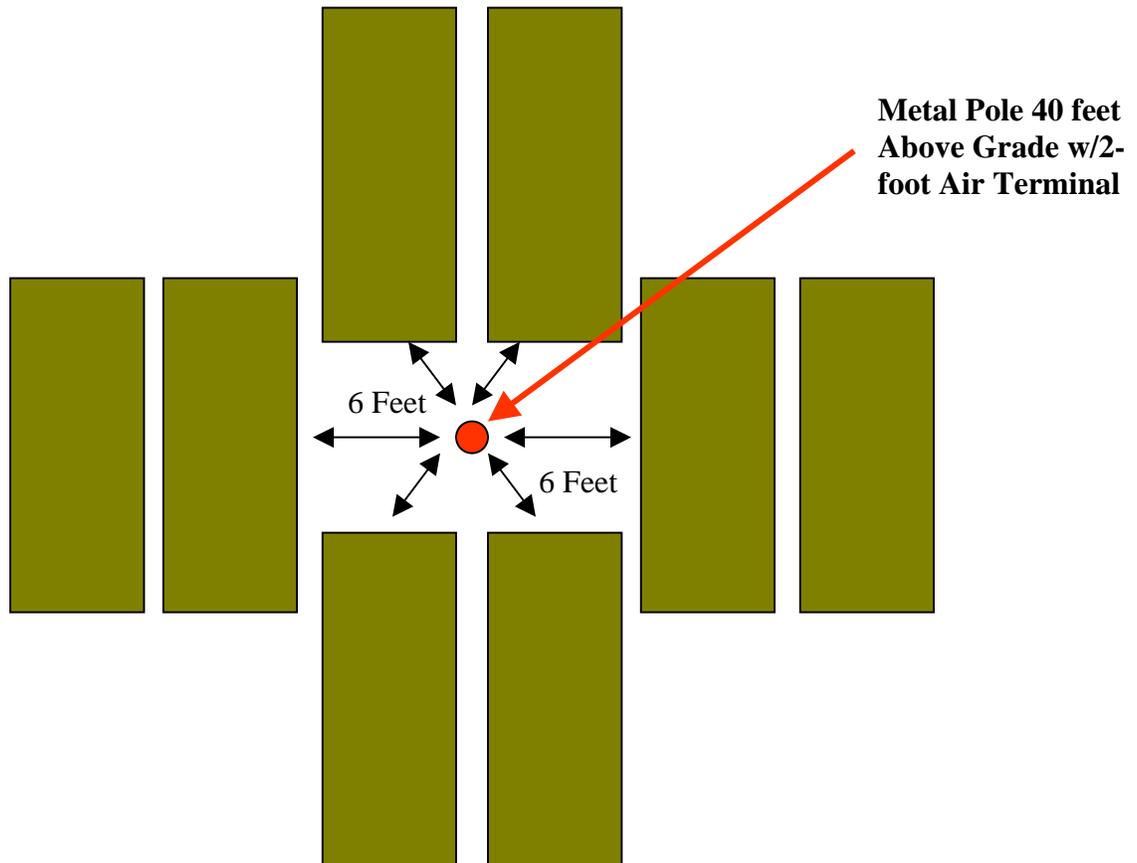
Improper Storage – Trash and Excess Dunnage
Potential Fire Hazard



Improper Storage – Unpackaged Munitions

AMMUNITION STORAGE IN MILVANs

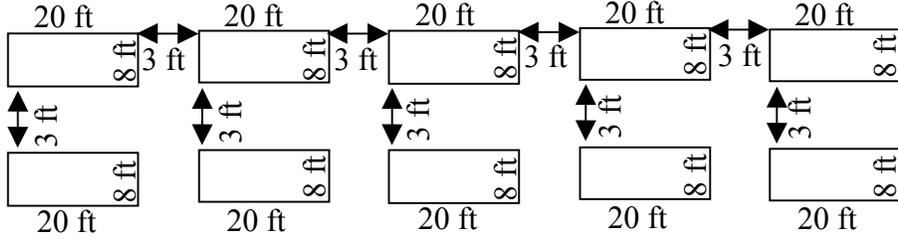
MAST TYPE LIGHTNING PROTECTION SYSTEM (RECOMMENDED)



This Single Mast System will protect up to 8 MILVANs

Ammunition Transfer Point Template

Site is limited by NEW constraint
8800 lbs.



CROPS are
 20 ft long
 8 ft wide

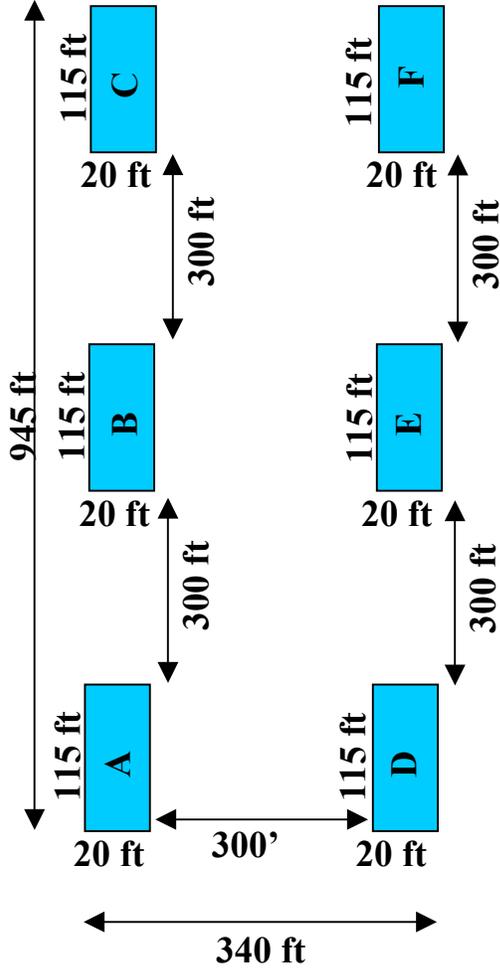
10 CROPS
 maximum,
 arrange
 lengthwise for
 ease of
 upload.
 Plan access
 along the
 sides of both
 rows. Allow 3
 ft between
CROPS.

115 ft

8800 lbs NEW
Maximum
*(could accommodate
 up to 10 CROPS)*

20 ft

Ammunition Transfer Point Template



Template for 6
Load Points each
separated by 300 ft.

