

STANDARD FORWARD OPERATING BASE DESIGNS INCORPORATING DoD AND ARMY EXPLOSIVES SAFETY REQUIREMENTS

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US Army Corps of Engineers
BUILDING STRONG®



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OUTLINE

- Background
- Why?
- DoD Policy
- Quantity-Distances
- Summary



BACKGROUND

- Need for Training FOB
- Fort Lee ➡ TRADOC ➡ HQUSACE
- USATCES determined need for standardized Combat FOB designs
- September 2007, funding was provided by the Defense Ammunition Center in McAlester, OK
- AFCS program was developing standard FOBs in modular packages
- USAESCH and USATCES applied explosives safety criteria to FOBs designed by AFCS



WHY IT'S IMPORTANT



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DoD POLICY

Expose the minimum number of people for the minimum amount of time to the minimum amount of explosives consistent with safe and efficient operations.

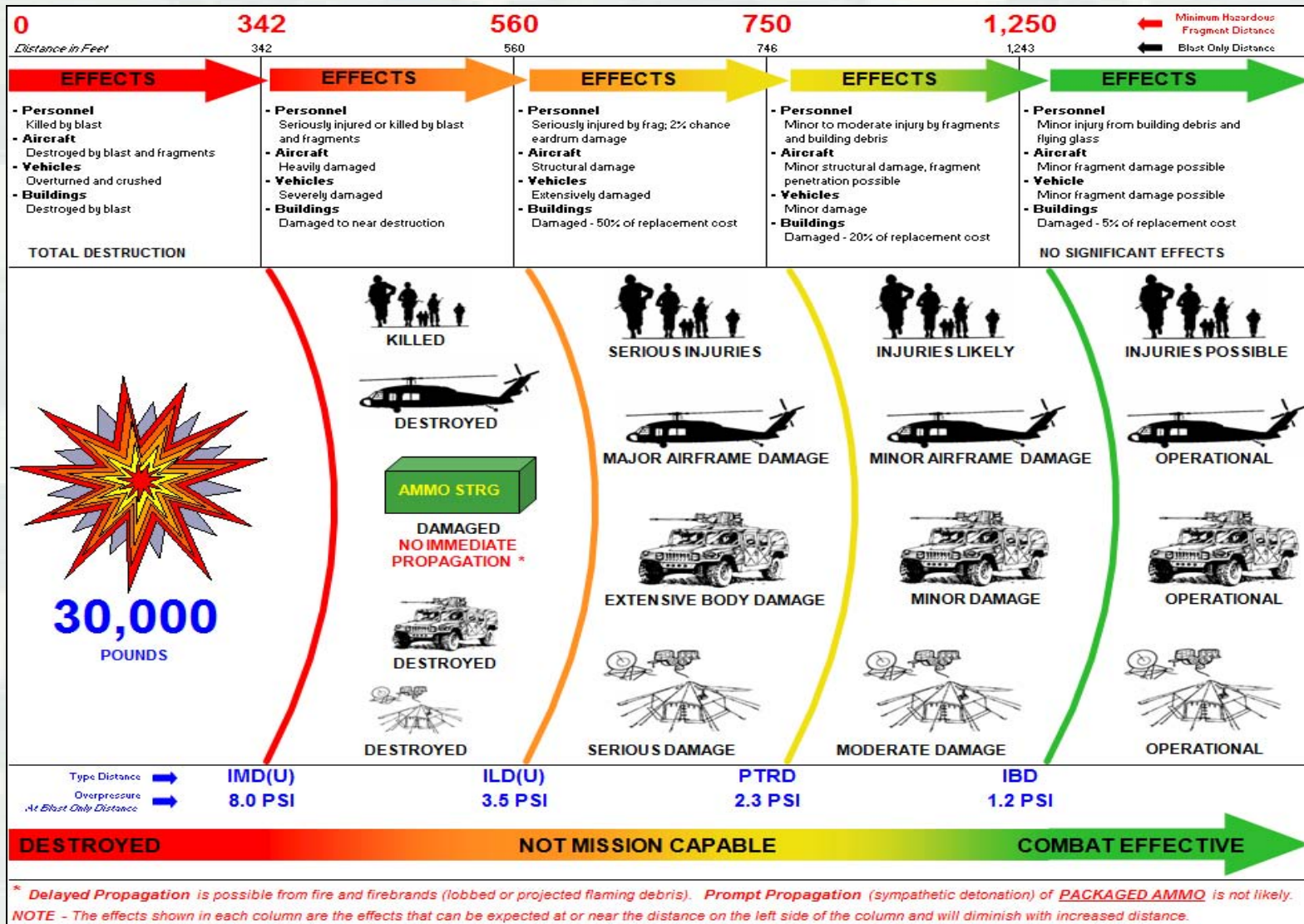


QUANTITY-DISTANCE BASICS

- Inhabited Building Distance (IBD)
 - ▶ Overpressure and fragmentation
- Public Traffic Route Distance (PTRD)
 - ▶ 60% of IBD
- Intraline Distance (ILD)
 - ▶ Related operations
- Intermagazine Distance (IMD)
 - ▶ Explosives storage/holding areas
 - ▶ Prevent prompt propagation



QUANTITY-DISTANCE BASICS



POTENTIAL EXPLOSION SITES

- Combat Loaded Vehicle Parking
 - ▶ Stalls separated by earth-filled barrier units
- Ammunition Holding Areas
 - ▶ Bays separated by earth-filled barrier units
- Small Arms Ammunition Storage
 - ▶ Constructed using MILVANs
 - ▶ Can be placed anywhere



C10.T1.

DoD 6055.09-STD

NEW	D1 ¹	D2 ²	D3 ³	D4 ⁴	D5 ⁵	D6 ⁶
(lbs)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)
[kg]	[m]	[m]	[m]	[m]	[m]	[m]
10	4	13	26	591	886	66
4.5	1.3	3.9	7.9	180	270	20
15	5	15	30	591	886	66
6.8	1.5	4.5	9.0	180	270	20
20	5	16	33	591	886	66
9.1	1.7	5.0	9.9	180	270	20
30	6	19	37	591	886	66
13.6	1.9	5.7	11.4	180	270	20
50	7	22	44	591	886	66
22.7	2.2	6.7	13.5	180	270	20
70	8	25	49	591	886	66
31.8	2.5	7.5	15.1	180	270	20
100	9	28	56	591	886	66
45.4	2.8	8.5	17.0	180	270	20
150	11	32	64	591	886	81
68.0	3.2	9.7	19.4	180	270	24.6
200	12	35	70	591	886	99
90.7	3.6	10.7	21.4	180	270	30.0
300	13	40	80	591	886	130
136.1	4.1	12.2	24.5	180	270	39.6

500	16	48	95	591	886	
226.8	4.8	14.5	29.0	180	270	
700	18	53	107	591	886	
317.5	5.4	16.2	32.5	180	270	
1,000	20	60	120	591	886	
453.6	6.1	18.3	36.6	180	270	
1,500	23	69	137	591	886	
680.4	7.0	20.9	41.9	180	270	
2,000	25	76	151	591	886	
907.2	7.7	23.0	46.1	180	270	
3,000	29	87	173	591	886	
1,360.8	8.8	26.4	52.8	180	270	
5,000	34	103	205	591	886	
2,268.0	10.4	31.3	62.5	180	270	
7,000	38	115	230	669	1021	
3,175.1	11.7	35.0	70.0	204.0	306.0	
8,818	41	124	248	751	1146	
4,000	12.6	37.8	75.6	229.0	343.4	



SUMMARY

- Given available real estate, explosives safety criteria applied to FOB layout
- QDs based on contingency standards in Chapter 10 of DoD 6055.09-STD Chapter 10
- 150- and 600-man standardized FOB designs produced
- Physical demarcations instituted
- Troop surge considered
- Completed standards included in Theater Construction Management System database
- For information, contact the US Army Technical Center for Explosives Safety



Questions?

