

US EPA ARCHIVE DOCUMENT



Use of the M69 Hand Grenade (and M228 fuse) Simulator on Camp Edwards



HG Qualification Range





M69 PRACTICE HAND GRENADE

The M69 practice hand grenade is used for all individual and collective training tasks.

The M69 practice hand grenade provides realistic training and familiarizes the Soldier with the functioning and characteristics of the M67 fragmentation hand grenade

COMPONENTS AND CHARACTERISTICS	DETAILS
Body	Hollow steel sphere
Filler	None
Fuze	M228, which is inserted into the grenade body
Safety Features	Safety clip Safety pin and pull ring with confidence clip Safety lever
Total Weight	14 ounces
Throwing Distance of Average Soldier	40 meters
Fuze Delay	4 to 5.5 seconds
Effects	Small puff of white smoke and a loud popping noise
Colors and Markings	Light blue with white markings; the safety lever of the fuze is light blue with black markings and a brown tip



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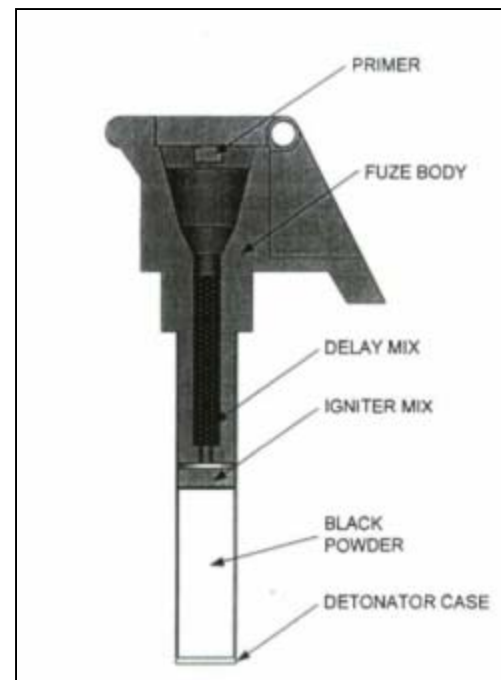
Camp Edwards Army National Guard Training Site

M228 Detonating Fuze:

During practice events and for qualification, each Soldier is required to throw several M69 practice hand grenades armed with the M228 detonating fuze

Although it takes only about a minute or less to install or replace a used fuze, a company-size element will use several hundred; preparing practice grenades for all participants is not feasible. Soldiers should be given instruction on installing and removing a fired M228 fuze.

All dunnage is turned into the Ammunition Supply Point. This includes the pin, spoon, and the fuze body.



HG Qualification Range





M228 Fuse Primer, Explosive, and Propellant Compounds

FOR OFFICIAL USE ONLY									
Page 1 of 1 7/30/2012		DAC - MIDAS PEP Structure in An Item							
Nomenclature : CTGIMPULSE		Reported Weight : 0.2500		Unit : LB					
NSN : 1377007296564		Reported Weight (lbs): 0.2500							
Status: OFFICIAL		Calculated Weight (lbs): 0.2488		99.54 %					
Drawing #	Std./Alt.	Nomenclature (Material)	Type	Reported Weight	Unit	Calculated Factor	Factored Weight (Lb)	Specification	TGCS
STD		PROP M10	P	580.0000	GR	1	0.082859	JAN-P-715	
STD		PROP M10	Mtl					JAN-P-715	
STD		NITROCELLULOSE (9004-70-0) (98%)	Cmpd					JAN-N-244	//C//
STD		POTASSIUM SULFATE (7778-80-5) (1%)	Cmpd					JAN-P-193	//A//
STD		DIPHENYLAMINE (122-39-4) (1%)	Cmpd					JAN-D-98	
STD		CHG PROP (BLACK PWDR CL 5)	P	15.0000	GR	1	0.002143	MIL-P-223	//5//
STD		BLACK PWDR CL 5	Mtl					MIL-P-223	//5//
STD		POTASSIUM NITRATE (7757-79-1) (74%)	Cmpd					MIL-P-156	//7//
STD		CHARCOAL (7440-44-0) (15.6%)	Cmpd					JAN-C-178	//7//
STD		SULFUR (7704-34-9) (10.4%)	Cmpd					MIL-S-14929	
STD		CHG PROP (BLACK PWDR CL 5)	P	50.0000	GR	1	0.007143	MIL-P-223	//5//
STD		BLACK PWDR CL 5	Mtl					MIL-P-223	//5//
STD		POTASSIUM NITRATE (7757-79-1) (74%)	Cmpd					MIL-P-156	//7//
STD		CHARCOAL (7440-44-0) (15.6%)	Cmpd					JAN-C-178	//7//
STD		SULFUR (7704-34-9) (10.4%)	Cmpd					MIL-S-14929	
STD		PRIMER MIX	P	2.2500	GR	1	0.000321	7259096	
STD		PRIMER MIX #5061W	Mtl					7259096	
STD		BARIUM NITRATE (10022-31-8) (43%)	Cmpd					MIL-B-162	//7//
STD		LEAD STYPHNATE (15245-44-0) (38%)	Cmpd					MIL-L-757	
STD		ANTIMONY SULFIDE (1345-04-6) (9%)	Cmpd					MIL-A-159	//1,2 OR 3//
STD		CALCIUM SILICIDE (12013-56-8) (8%)	Cmpd					MIL-C-324	//2//
STD		TETRAZENE (31330-63-9) (2%)	Cmpd					MIL-T-46938	
0.092466									
FOR OFFICIAL USE ONLY									

M69 Practice Hand Grenade M228 Fuze Constituents	Weight (Grams)
PRIMER Mix #5061W	0.146
Barium Nitrate - 43%	0.063
Lead Styphnate - 38%	0.055
Antimony Sulfide - 9%	0.013
Calcium Silicide - 8%	0.012
Tetrazene - 2%	0.003
PROPELLANT M10	37.58
Nitrocellulose - 98%	36.8
Potassium Sulfate - 1%	0.38
Diphenylamine - 1%	0.38
BLACK POWDER	0.97
Potassium Nitrate - 74%	0.72
Charcoal - 15.6%	0.15
Sulfur - 10.4%	0.1
BLACK POWDER	3.24
Potassium Nitrate - 74%	2.4
Charcoal - 15.6%	0.51
Sulfur - 10.4%	0.34





Hand Grenade Training Program

Hand grenades rapidly degrade the enemy's detection, observation, and engagement capabilities, enhancing the maneuver and firepower capabilities of ground forces conducting dismounted operations inside restrictive terrain.

HG proficiency is critical to Soldiering and is required for any unit deployed to a wartime theater.

Objectives

- The hand grenade training program progresses using the crawl, walk, and run methodology. The program advances from fundamental to advanced training, culminating with the integration of hand grenades into situational and field training exercise.
- Once Soldiers achieve proficiency, a sustainment program is implemented to maintain a high proficiency level.

Initial Training

- The training strategy for hand grenades begins in initial entry training (IET) and continues in the unit.
- In IET, Soldiers learn how to inspect and maintain HG, prepare for throwing, and throw from three positions (standing, kneeling, and prone). Soldiers are given instruction on M67 and M69 HG's.

Sustainment Training

- Training continues in active Army, National Guard, and Army Reserves units using the same basic skills taught in IET, but at a higher level of skill. Units conduct a year-round program to sustain necessary skills.

- ★ • Participate in initial hand grenade training
- ★ • Participate in distance and accuracy training
 - Participate in mock-bay training
 - Participate in live-bay training
- ★ • Complete the hand grenade qualification course

HG Qualification Range





Distance and Accuracy Ranges

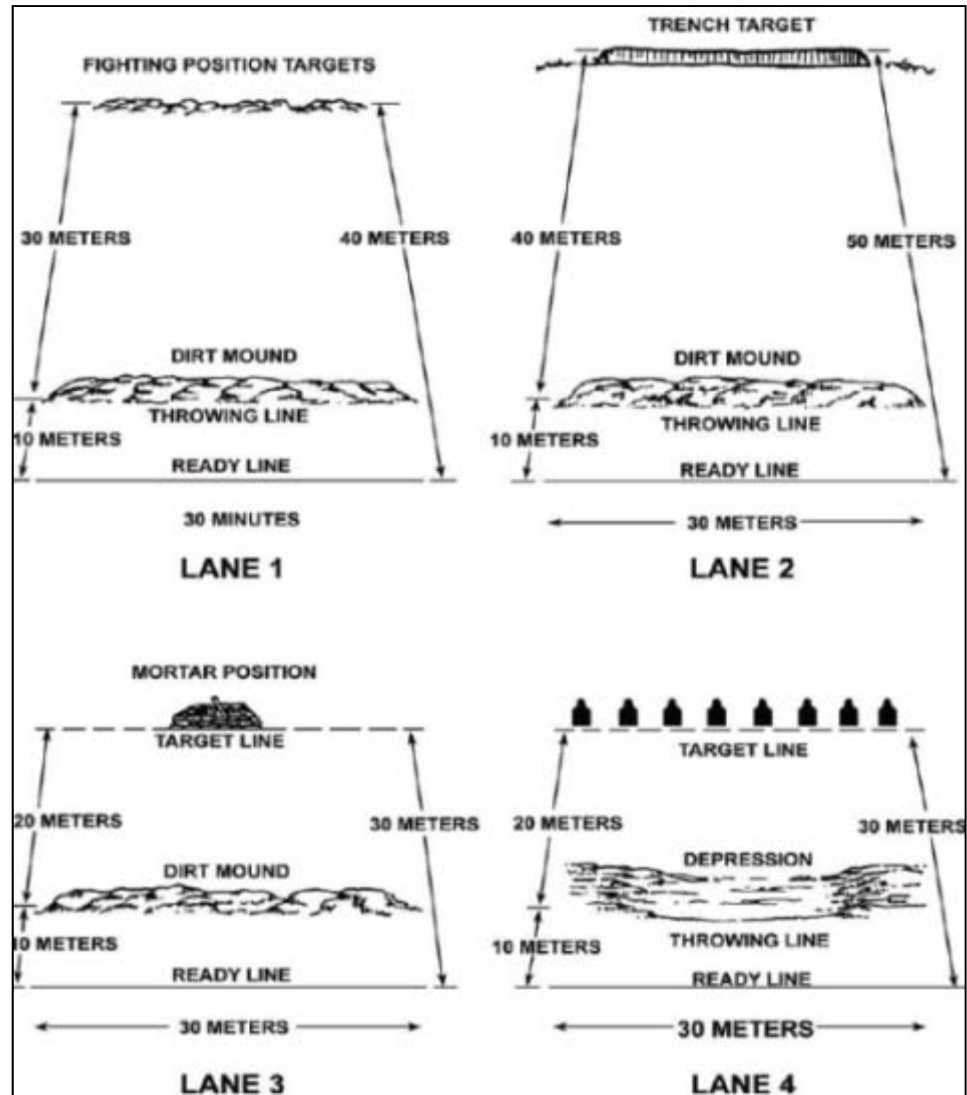
A four lane layout which enables Soldiers to engage:

- A fighting position at 30 meters
- A trench target at 40 meters
- A fortified mortar pit at 20 meters
- Soldiers in the open at 20 meters

Task: Engage a variety of targets at varying ranges up to 40 meters

Condition: Given 10 practice grenade, individual equipment, and a four station course with a variety of targets at distances of 20, 30, and 40 meters.

Standard: The Soldier must successfully engage targets At each station with two out of three grenades. The Soldier must throw from the alternate prone, prone-to-kneeling, and prone-to-standing positions. A target is successfully engaged when the grenade detonates with 5 meters of the target.



HG Qualification Range



UNCLASSIFIED



Hand Grenade Qualification Course

A seven- station layout which enables Soldiers to engage:

The hand grenade qualification course is Standardized throughout the Army. It consist of seven stations with a minimum of one grader at each station. The course is conducted in two-man teams, but Soldiers are evaluated individually. Each participant is issued ten hand grenades and must successfully engage seven targets.

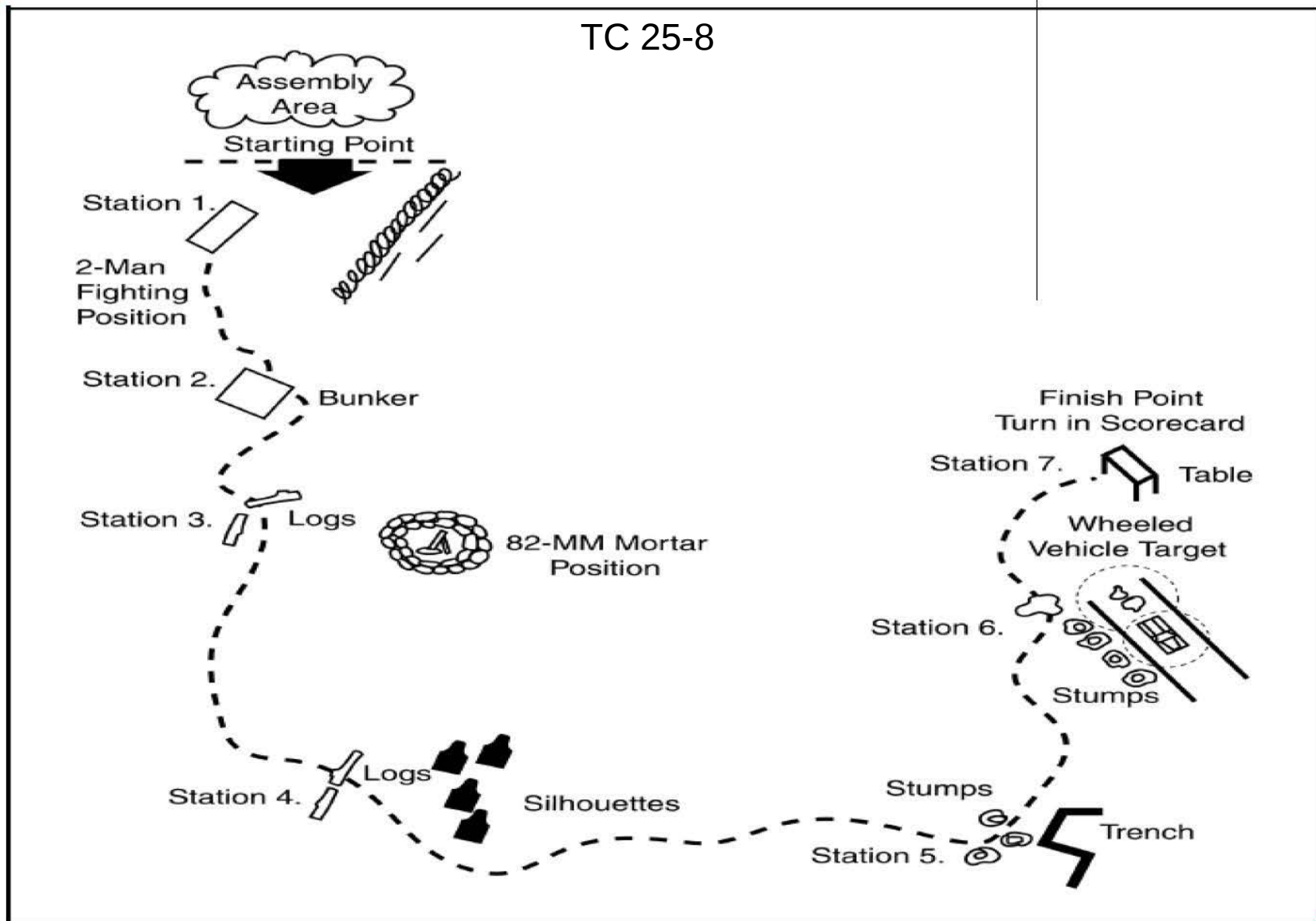
Table 2-4. Hand grenade qualification course stations.

STATION	TASK	CONDITION	STANDARD
1	Engage a group of F-type silhouette targets in the open from a two-man fighting position.	The targets are located 35 meters to the front of the fighting position, simulating enemy movement through and beyond the squad's protective wire.	No more than two grenades should be used on any target. Only one is used if the first grenade is on target.
2	Engage a bunker using available cover and concealment.	The bunker can have one or two firing portholes oriented toward the direction of the buddy team's movement and a rear exit.	
3	Engage a fortified enemy mortar position.	The fortified enemy mortar position must be located 20 meters away.	
4	Engage a group of enemy targets.	The group of enemy targets must be behind cover and located 20 meters away.	
5	Clear an entry point to a trench line.	The trench line must be located 25 meters away.	
6	Engage enemy troops in a halted, open-type wheeled vehicle.	The halted, open-type wheeled vehicle must be located 25 meters away.	
7	Identify hand grenades and pyrotechnic signals.	All grenades must present proper shape, color, and markings.	Soldiers must be able to identify grenades and pyrotechnic signals by shape, color, markings and capabilities.





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HG Qualification Range





7 Stations



Figure 2-11. Station 1, engage enemy from fighting position (standing).



Figure 2-12. Station 2, engage bunker (prone).



Figure 2-13. Station 3, engage enemy mortar position (kneeling).





Figure 2-14. Station 4, engage enemy from behind cover (prone).

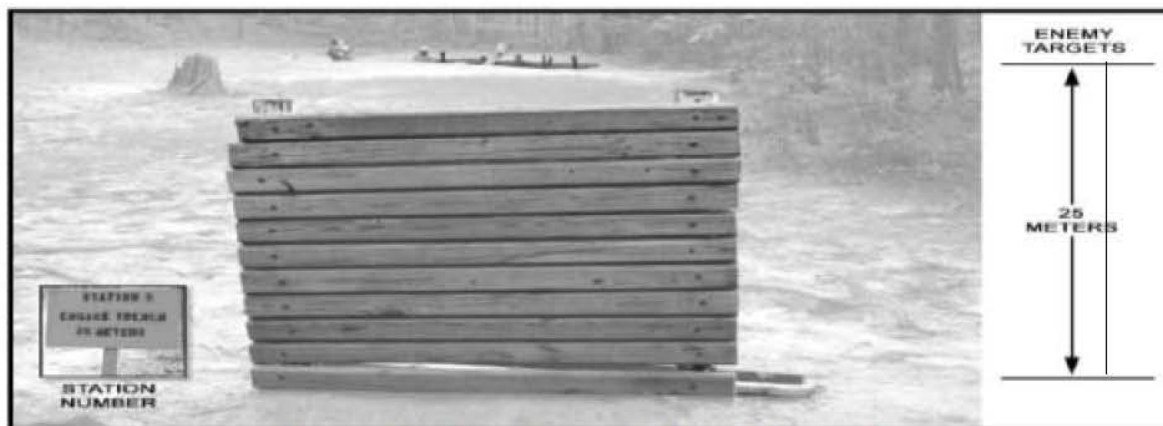


Figure 2-15. Station 5, engage trench (standing).

HG Qualification Range





Figure 2-16. Station 6, engage wheeled vehicle (kneeling).



Figure 2-17. Station 7, identify hand grenades and pyrotechnic signals.

HG Qualification Range



