

Nuclear Burst Simulation

—simple, cheap, effective

The clear crisp air is shattered by the brilliant flash. A thunderous roar quenches the silence. Soldiers dive for cover, escaping the deadly radiation burst. Radios fall silent.

A nuclear weapon has been employed; however, this is only training. A simulator device is detonated to give the illusion of the burst. Creative training and planning has resulted in an effective display of the firepower a nuclear weapon brings.

Mr. Roger Boyd at the United States Army Chemical School created the nuclear event with flame field expedients (FFE's). Members of the Smoke and Flame Division, Nuclear, Biological, and Chemical Proponency Training Department, are teaching students to prepare the explosive shots for training exercises. Resident students receive an eight-hour block of hands-on training in FFE techniques. The NucSIM is one shot students remember.

This device has one advantage: its simplicity. It consists of a doughnut-shaped trench seven feet in diameter, eight inches deep. The fuel mixture of MOGAS and thickener is prepared in a 55-gallon drum. The firing chain

consists of detonating cord (DET cord), two blocks of C-4 compound, and electric blasting caps. That's it.

A note of caution: Explosives must be prepared for detonation by qualified personnel. The minimum safe distance (MSD) is 300 meters from ground zero. Flammable vegetation is at risk for 100 meters. Viewed from 1 to 5 kilometers away, the fireball's recognized as a nuclear burst.

Here's a list of ammunition items that must be forecasted well

in advance of the exercise:

DODIC	Nomenclature	Quantity
L495	Flare, surface trip M49	2
M023	Composition C-4, 2¼ lb.	2
M130	Blasting cap, electric	2
M456	Detonating cord	100 ft
K917	M4 thickening comp 2½ can	2
MOGAS		50 gal
Motor oil	30 wt	20 gal

Mr. Roger Boyd examines the preliminary groundwork prepared for the simulator device.





The device explodes, above left, and the fireball begins its climb, above middle. Continuing to mushroom, the fireball completes its ascent, below.

The cost of this device is roughly \$160.00.

The training area used for this device must be cleared for demolitions and FFE materials. Then the actual site is selected, taking into consideration the observation points, the maneuver area, and the safety distances required. Remember also, the timing coordinations for detonation versus where the personnel are located.

The operations order for the exercise must include the situation of nuclear employment by the enemy. Any burst of this device will be seen as a ground burst type detonation. The fireball rises from the ground and the cloud is black in color. This scenario leads to fallout in the training area. Therefore, the T-1 LARTS is another training device for use during this exercise. Soldiers carry the receiver sets of the T-1, either the IM-174A trainer or the AN/VDR2 training probe. Contamination avoidance or crossing contaminated areas can be trained with this scenario.



Detailed sets of instructions are available through the Smoke and Flame Division, NBC Proponency Training Department, USACMLS. Their address is:

Commandant, USACMLS
ATTN: ATZN-CM-NSF (Mr. Boyd)
Fort McClellan, AL 36205
Please allow 8 weeks for a reply.

