This technique is similar to the marked sling method used with the M79 and shown in the manual. It consists of a weighted string attached to the right side of the front sling swivel (as shown in the photograph) to help a gunner achieve

the proper high angle for the desired ranges. At various pre-marked points the weighted string will hang in a particular relationship to the butt of the weapon. The table gives a fairly accurate estimate of the angle of elevation for various ranges and the distance the string should hang out from the butt of the weapon to achieve that angle.

After a gunner gets the feel of this kind of firing, the weighted string, while still desirable, will no longer be necessary.

The second phase of instruction should be conducted at the firing line so the soldiers can experiment under close supervision. The most effective round to use for this firing is a smoke streamer round from the M696-M701 series. Each gunner should be allowed 10 smoke rounds.

A smoke streamer provides an advantage over TPT rounds in that soldiers can visualize the trajectory of each shot and can adjust for the proper point of impact. (Because of the near perpendicular angle of incidence at the target surface, TPT marking powder does not splash well and is therefore difficult to identify.) With the smoke round, most new gunners can come within five meters of the target with the first four rounds. Accuracy greatly increases with the amount of experimentation each gunner does.

Subsequent sustainment training can be accomplished with ten smoke rounds being allowed each gunner when the unit conducts its M203 qualification firing. Leaders should also make a point of showing their grenadiers when this technique could be used during training exercises in the field and during MOUT exercises.

Here are a few points to bear in mind with M203 high angle fire:

• Because of the potential for error with the M203 in high angle firing, soldiers in training should be closely monitored. At ranges of less than 200 meters, small movements of the weapon produce great decreases in range.

• The time of flight for the projectile is between 10 and 14 seconds. This increases a round's exposure to wind vectors, which affect range and deflection more than when it is fired at a low trajectory. For this reason, a round should not be used for training at less than 150 meters.

RANGE	ELEVATION	STRING DISTANCE
0 M	90°	-2"
50 M	85°	+½"
100 M	81°	+2"
200 M	69°	+6"
300 M	58°	+14"
400 M	41°	+19"

• The maximum ordinate of flight is about 150 meters. Shots can be made on top of or over 15-story buildings with angles of as little as 75 degrees. With taller buildings, however, there is a risk of an overhead burst that might endanger friendly troops.

When used for high angle firing, the M203 should be considered a supplementary technique that increases the flexibility and self-sufficiency of small units in urban terrain. Becoming proficient with this technique should be a challenge to the grenadier who wants to be a professional with the M203. By exposing his grenadiers to this method, a company commander can increase the capability and fighting power of his unit.

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Live Fire Exercises

CAPTAIN GARY A. BRACHT

The commander's and platoon leader's orders had been issued, rehearsals conducted, and final coordinations completed. As the time to cross the line of departure approached, last minute weapon checks were conducted. At the attack position, the order was quickly passed to lock and load. There were no blank adapters or dummy demolitions. Instead, each soldier had been issued his basic load of ball ammunition. The M203 gunners' ammunition vests bulged with 40mm target practice and smoke rounds. The attached engineer squad members carried their satchel charges and bangalore torpedoes. The 90mm recoilless rifle gunners and assistant gunners arranged their flechette rounds to be readily

available when they were needed.

This infantry company team was preparing for a live fire deliberate attack against an "enemy" with extensive wire obstacles and prepared defensive positions. The attack was to be a graded exercise for the unit based on the standards in ARTEP 7-15. Once contact was made with the "enemy" force, it would take an hour for the company to secure its objective. The company team would open multiple lanes through the wire obstacles and destroy several bunker complexes while conducting continuous fire and maneuver.

This training event was only one of many similar live fire exercises that my company in Alaska conducted, exercises that ranged from squad to company level. The exercises substantially increased the confidence of the individuals and leaders in themselves and in the unit. This was especially noticeable in the trust they showed for their fellow soldiers and their equipment.

The procedures used to conduct exercises such as these are not exotic, and they do not require much more coordination by a company commander and the battalion S-3 than any other training event requires. Particular items do deserve special attention, though.

Individual training and leader training must be conducted regularly before a live fire exercise begins. If the soldiers have difficulties in conducting ARTEP and individual tasks with blank ammunition, they will gain little from the additional pressure of firing live ammunition and will usually waste precious resources (time, ammunition, and training areas) as well. Too, any units that are to be attached for the live fire exercises must work with the supported unit on a continuing basis. If this coordination is conducted in all training events, mutual trust and confidence are established at the outset.

Preparing a training plan for a live fire exercise begins when a commander selects the ARTEP task he wants to accomplish—movement to contact and hasty attack, deliberate attack, defense, antiarmor ambush, or a raid. Once the commander has identified the task, and any supplemental tasks, his chief planner then must review the range regulations for his post. He may find, for example, that several weapon systems cannot be used in offensive operations because of their dud-producing capability. After reviewing the regulations, he selects a site or "lane."

EVENT	TIME
Approval of scenario, safety fan, and safety plan	6-8 weeks prior
Request support and attached personnel	Per unit SOP
Movement to assembly area	0800-1100 (the same day of the live fire)
Ammunition arrives at assembly area	0900
Safety personnel posted at key spots	1000
Unit arrives at assembly area and conducts final rehearsals	1100-1230
Ammunition issued to soldiers	1230-1330
Safety briefing to chain of command	1330-1345
Range sweep by assistant safety officer in OH-58	1330-1345
Range opened in "dry" status	1345
Unit crosses line of departure	1400
Range opened in "hot" status*	1415
First contact with "enemy" forces (LP/OPs)	1430-1445
Seizure and occupation of objective	1530-1600
After-action review and ammunition shakedown	1615-1630
Movement to next training site or to garrison	1630

*An alternate time can be identified if events prevent opening the range at the established time. Concurrent training can be used to make up the time difference.

Table 1

Safety personnel must be stationed at every key road intersection that leads into the safety fan and maneuver area. As an added safety measure, if possible, an OH-58 helicopter with an assistant safety officer can operate above the area to reduce the number of safety personnel needed on the ground. The OH-58 can also conduct a final safety check to spot anyone who may have accidentally entered the maneuver or impact areas.

A senior safety officer should be with the unit conducting the live fire exercise to monitor it and to see that it stays within the designated maneuver area and oriented on the impact area. He should carry an FM radio to monitor the post's range control frequency. If range control requires a cease-fire, the safety officer can immediately notify the commander in person to check his fires. He should also carry red pyrotechnics for use as backup emergency signals in case a cease-fire is required. (This is especially important if the live fire is conducted during periods of limited visibility.)

The rest of the safety tasks for the range should be handled by the existing chain of command of the maneuver unit, and if those people do their jobs right, safety will be no problem. To the uninitiated, this policy may seem reckless, but it works very well, and reduces the number of safety personnel required on the range.

The safety fan for the range must extend beyond the maximum range of the weapon systems being fired during the exercise. The left and right limits should be wide enough to avoid having to place "barber pole" markers to identify the sectors. (These markers detract from the realism of the objective.) The approval of the safety fan also must include approval of the air space above the range; some ranges, for example, may have air corridors above them that are used by military and civilian aircraft.

The objective for a live fire exercise can be as elaborate as the planner wants to make it. For instance, the engineers can design and emplace Soviet style trenches, obstacles, and bunkers. "Enemy personnel" can be simulated by "E type" silhouette targets dressed in Class X fatigues with balloons pinned to their chests. A broken balloon can then represent a kill of the target. Property disposal vehicles, towed on long ropes or cables, can be used as moving targets for a unit in an antiarmor ambush.

Electrically fired demolitions can be

TYPE	Co movement to contact/ hasty attack	Plt personnel ambush	Plt antiarmor ambush	Co deliberate attack	Co defense	Squad raid
5.56 ball	3000	2000	1500	5000	3000	600
5.56 tracer	200	50	50	200	200	20
7.62 4:1 mix	2400	800	800	2400	2400	400
40mm practice	200	40	40	300	200	15
40mm smoke	80	10	10	80	20	4
35mm LAW subcal	20	0	6	20	20	0
90mm HEAT/Dragon	0	0	4/2	0	12/4	0
90mm Flechette	18	4	2	18	12	0
Claymore	0	4	4	0	18	0
C-4/TNT (pounds)	5-10	0	0	10	0	2
Smoke grenade various colors	18	4	4	18	10	4
Red Star and smoke	2	2	2	2	2	2
Star cluster/ 40mm cluster various colors	6	6	6	6	6	2
81mm HE	0	0	0	0	20	0
81mm WP	0	0	0	0	10	0
81mm Illum	0	0	0	0	10	0
Hand grenade simulators	50	10	0	70	0	10
Bangalore torpedoes	2	0	0	3	0	0
Satchel charges	2	0	0	3	0	0

Note: 100-man company (light infantry); 25-man platoon; 8-man squad (includes attached machinegun).

Table 2

placed on an objective. When fired by the safety officer in conjunction with "preparatory fires" on the objective, they can represent incoming artillery rounds. (A word of caution: the firing leads to the demolitions should be buried at least six inches deep, otherwise suppressive fire on the objective can cut the firing leads and result not only in demolition misfires but also in needless ceasefires while the misfired demolitions are fixed.)

ALLOW FOR DELAYS

As with all operations, the planner must allow enough time on the range for unanticipated delays (such as ammunition that is late in arriving or weather conditions that unexpectedly close ranges). If the unit coordinates with range control personnel for several specific periods of "hot" times on the range (usually one-half to one and one-half hours) with the rest of the range time identified as "dry" time, all operations can be accomplished even with some unexpected problems. (A sample time schedule is shown in Table 1.)

For company level operations, the company executive officer or battalion S-3 should be responsible for setting up the objective. This keeps the company commander from wargaming the objective before the actual event. In fact, for the maximum training benefit, none of the leaders should see the objective before the live fire exercise is actually conducted. If they do, they lose the training benefit of having to assess the situation and issue fragmentary orders based on the actual conditions.

To add training benefit and realism, soldiers should be required to lock and load their weapons when they leave the attack position (if not sooner), as they would do in an actual combat area.

Once a unit completes an exercise, the unit leaders should conduct an after-action review along with the safety officer. Only with an effective critique or review does a live fire exercise become a valuable training tool and not a John Wayne shoot-'em-up. I have learned several common lessons from these reviews:

- Soldiers are initially reluctant to conduct fire and maneuver when live rounds are being fired, but this reluctance disappears after one or two live fire exercises.
- Fire control measures and fire discipline require constant attention and emphasis.
- Leaders initially try to shout over the sounds of the firing instead of moving to the person they need to talk to. Soldiers must look to their leaders for hand and arm signals, and radio-telephone operators must keep their handsets at their ears if they expect to hear any radio transmissions.
- Platoon leaders have to make sure they control the fires of their crew-served weapons, and squad leaders have to direct the fire of their LAWs and organic weapons.

Although ammunition expenditures may have to be modified because of local situations, my company used the ammunition shown in Table 2 for various live fire exercises. These amounts would be used for a fairly difficult objective or operation. For a simpler scenario, these amounts could be reduced by 25 to 40 percent.

When live fire exercises are included as a part of a commander's training plan, a unit's confidence, morale, and willingness to close with and destroy the enemy is greatly improved. The techniques I've described are not new, but they offer a way for leaders to truly test their units before the ultimate assessment of combat must be made.

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