

**mishap**

# LESSONS LEARNED

## MISHAP SUMMARY

### Mishap

Mortar Live Fire

### Damage

One (1) 60MM Mortar Tube destroyed

### Injury

Seven (7) Fatalities, Eight (8) Injuries

### Operation

CONUS, Life-Fire and Maneuver

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## Fatalities in Live-Fire Mortar Exercise

### SUMMARY

During CONUS training, an Infantry Battalion was engaged in a night Company live fire and maneuver training. Two 60mm mortar teams—referred to as Gun 1 and Gun 2—occupied a firing position in order to provide both illumination and high explosive rounds for an established target. At the mortar position, Gun 1 was designated to fire high explosive rounds, and Gun 2 utilized illumination rounds. Approximately 36 minutes into the evolution, the mortar section began firing on the objective target. After two rounds of high explosives and three rounds of illumination were fired properly, an explosion occurred in Gun 1 (the designated high explosive gun), resulting in the death of seven Marines, as well as injuries to an additional seven Marines and one Corpsman.



## CONCLUSIONS

### Direct Cause

Human error was deemed the direct cause of the incident. The assistant gunner inappropriately loaded a second high explosive round into Gun 1 while another round was being fired.

### Root Causes

*Training:* Lack of a sustained live-fire progression training, specifically for the mortar section. In the months leading up to the training, the company had not followed a progression that would have prepared it for conducting this exercise. The first live-fire run on the range within nine months was conducted that day.

*Supervision:* Supervision and training issues are related and both had a role in this event. The training progression had been adversely impacted by a deployment, and gun team assignments were shuffled with no apparent higher level concurrence.

## Contributing Causes

*(Note: Contributing causes are identified as events or conditions that collectively increase the severity of an occurring mishap, but individually, would not have caused the occurrence.)*

*Limited Dispersion:* The gun teams and associated personnel lacked appropriate dispersion. The tubes were placed in close proximity, approximately eight to ten feet apart. This contributed to—and increased the number and severity of—the casualties, and possibly contributed to the likelihood of the incident, itself. Overall, standard mortar employment practices were not adhered to and an inadequate analysis was conducted in order to arrive at decisions on dispersion.

*Medical Evacuation Plan:* The local hospital was the only medical facility in the area, but was not a Level 1, 2, or 3 trauma center. All of the ground patients transported by medevac initially arrived at this center, where it was determined that the facilities were not prepared to handle this level of medical care. Additionally, getting casualties to the nearest trauma center was problematic due to a two to three hour drive time and an anticipated wait of 30-45 minutes for air medevac. With the medevac aircraft ultimately requested, the transport arrived approximately 53 minutes after the initial call. One helicopter touched down at the wrong range initially, and was not able to accept GPS coordinates as a method to find the correct site. The total time—from the timing of the incident, to arrival at the trauma center—was over two hours, and each aircraft could only carry one patient. Finally, moving patients by ground from the site was also problematic. Emergency vehicle access to the training site was limited by troublesome terrain which delayed care for casualties.

## LESSONS LEARNED

- Mortar employment criteria must be reviewed, evaluated, and should address dispersion risk factors. Specifically, criteria should focus on hand-held firing, conditions that make a double feed more likely, and procedures that mitigate the likelihood of a double feed.
- Consider the increased use of 60mm training practice inert mortar rounds (DODIC BA15) to eliminate the risks associated with high explosive rounds on the gun line.
- Ensure strict compliance with MCO 3570.1C (Range Safety), NAVMC 3500.44 (Infantry T&R manual), applicable FM/TM manuals, installation range guidance, and applicable SOPs for safe training and firing for each weapon's system within the command.
- Leadership must be cognizant of the impact OPTEMPO has on prescribed training progression. Changes in OPTEMPO, turnovers in leadership, and other operational demands that degrade or significantly alter prescribed training should give Commanding Officers pause and prompt them to re-assess their risk mitigation strategies.
- Live-fire weapons training in particular must be accomplished in a "Crawl, Walk, Run" sequence over a sustained period to ensure Marines are competent and proficient prior to the first round being fired. Specific to this event, the Infantry training and readiness manual specifies requalification every six months for mortar sections employing the hand-held mode.
- ORM is not a one-time paper drill, but a dynamic process that must be employed to manage risk when parameters change. Attempting to "pick up where we left off" might seem expedient, but the severe consequences of a live-fire exercise gone wrong require the highest level of scrutiny and continuous application of risk management.
- Emergency action and medevac plans must be briefed in detail and rehearsed. Coordination with local medical facilities, EMS, and other first responders must occur to understand their ability and limitations for providing support.